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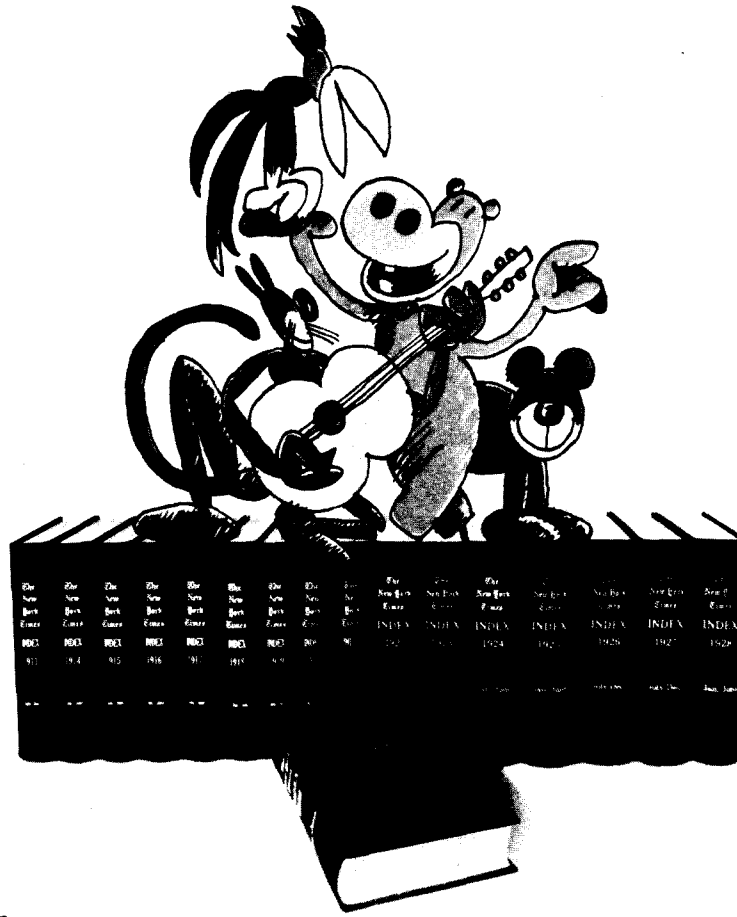

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Editor: JANET D. BAILEY

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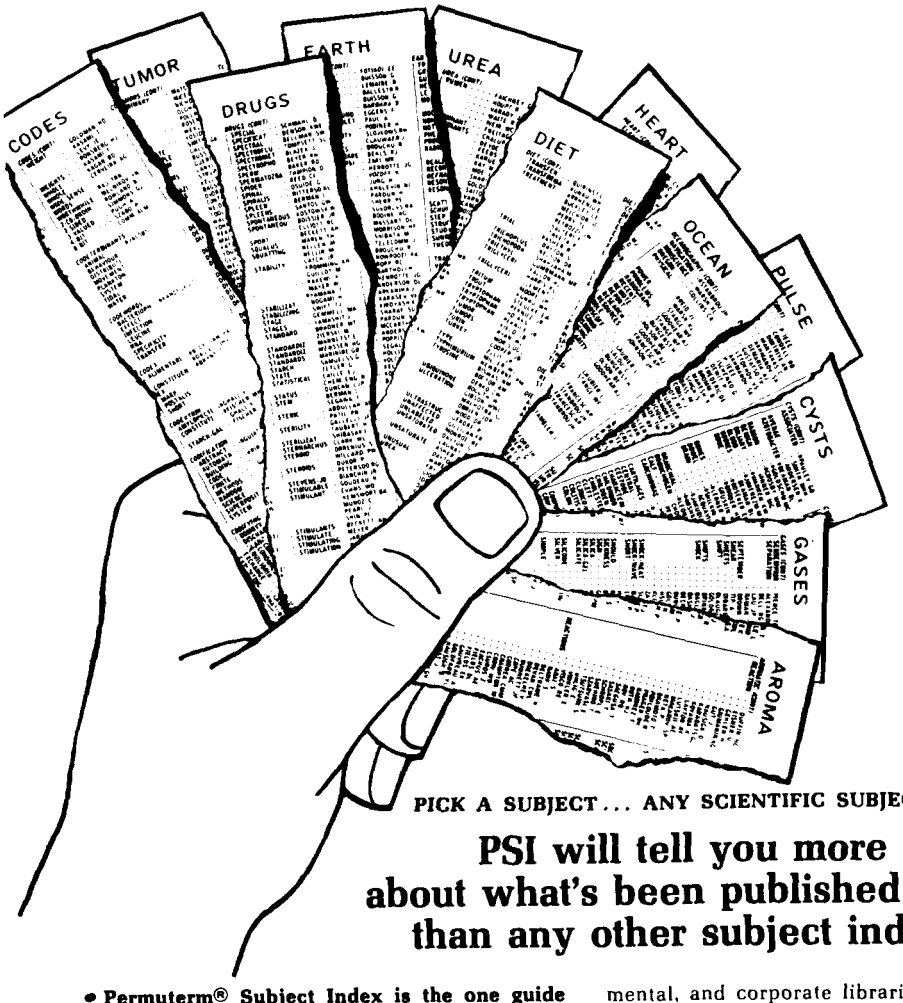

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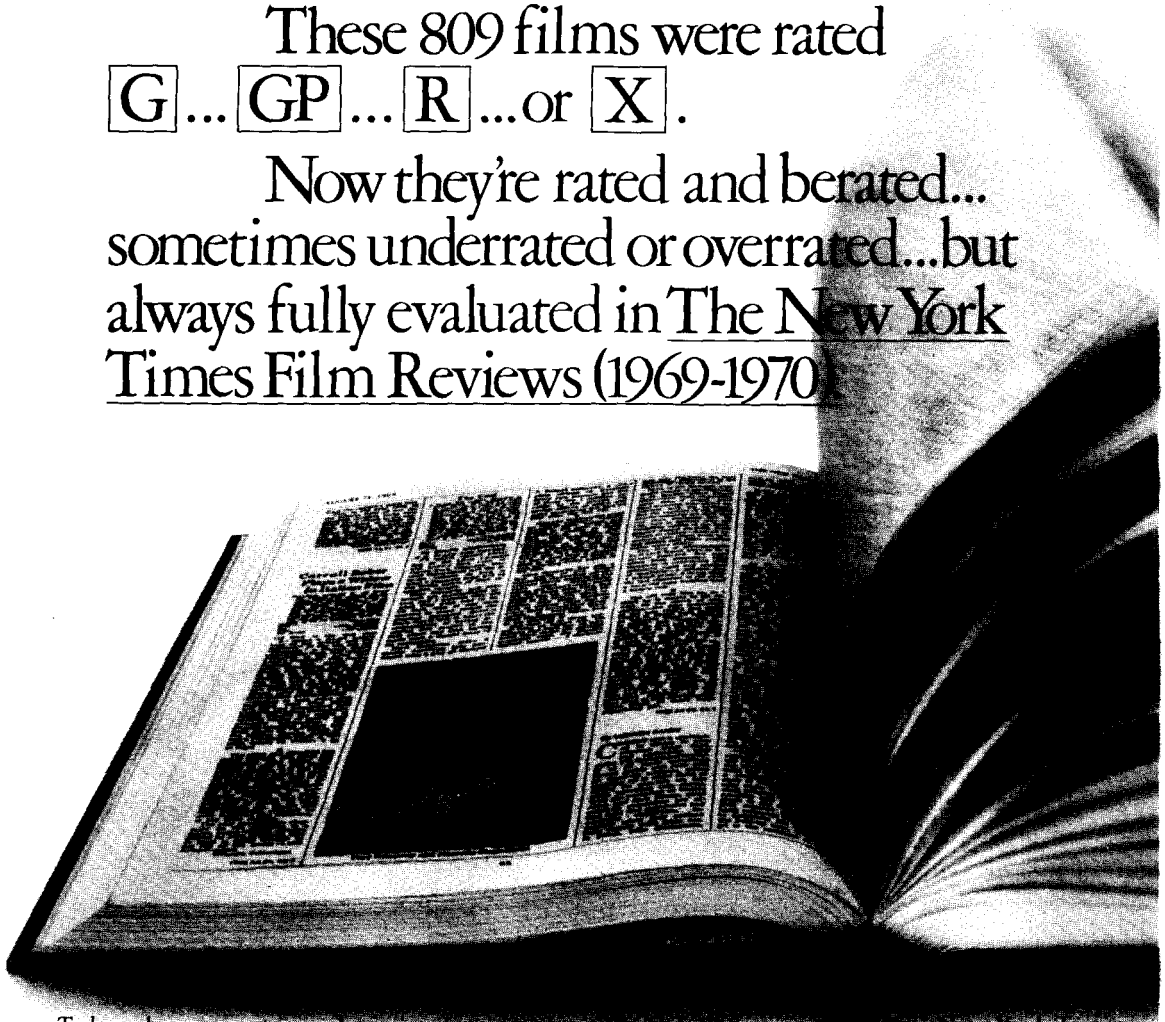

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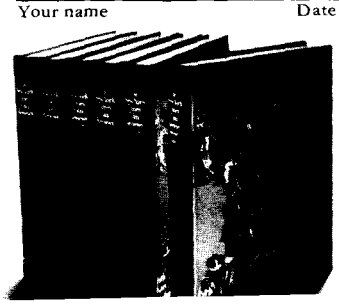

Priorities for the Profession

Now that the question of the proposed SLA-ASIS merger has been settled for a while, it is time the Association reconsidered its priorities. In view of the current financial crisis, can SLA be concerned with the welfare of an entire profession without thought to the needs of its individual members? No one is forced to join SLA, ASIS, ALA, or any other professional body (except unions under a closed shop contract). Ideally, librarians join organizations like SLA because we believe they contribute to our professional growth. SLA provides one means, ASIS another, ALA and state associations still another.

The decision to join or not to join a professional organization must be left up to the individual. Each of us has his own priorities and personal commitments (or we should!), whether they be to political action, education, the environment, or, as in the case of Miss Jessie Agnes Matson, humane treatment of animals. Doubtless many members of library organizations have been forced to decide where their professional dues are best spent.

Considering what has been happening in the world, it is time SLA took a good look at what it can do for its *members*. During the past few years, what has the Association (as opposed to individual Chapters) done to further the education of its members, e.g., sponsoring courses or workshops? Has the Association been in touch with management organizations, offering to help educate their members on the importance of special libraries? What concrete assistance can we offer a library manager whose facilities are being closed? How about pressure on legislators on all levels for increased funding of special library activities? To begin with, there's Title III of the Library Services and Construction Act, designed to fund cooperative efforts that include special libraries. Is preservation of our members' jobs important to SLA? If so, where were we when the SST and Lockheed issues were being debated, when aerospace funds were ruthlessly cut, or when other budgetary action was taken by Congress and other legislative bodies which cost our members' jobs? Do we know how many members depend on aerospace/defense for their employment? How about accrediting special libraries?

SLA—and every other professional organization—will retain its members and attract new ones only if it provides a return for the dues we pay. The Association's score on pocketbook issues such as employment, salaries, and other benefits has been zero.

I would like to see the Association restructure its priorities. Rather than nitpicking about issueless issues such as changes in IRS status,* name changes, and mergers, we should ask: "What is best for SLA *members?*" Among the programs I feel important are:

1. Education of management on the importance of *good* libraries to their businesses. Poor library service is worse than no library service.

2. Sponsorship of continuing education programs for our members and for the profession at large. This should include financial underwriting to bring the cost of such courses down for young members, as well as for those whose budgets do not include company funds for education. (A typical extension course at the University of California, Los Angeles, costs between $50–$60 for a quarter's instruction.) Such courses could also serve as effective membership recruiting devices.

3. Legislation to insure funds for publicly-supported special libraries. Our national goal should be complete funding of LSCA Title III. All state and local libraries, particularly publicly-supported special libraries, should be vigorously supported at budget time.

4. Accreditation of special libraries, including assistance for SLA members in bringing their libraries up to SLA standards (which would include salaries, budget allocations, working conditions, and qualitative value of the collection).

If SLA does not re-orient itself towards the really pressing needs of us members, we will go elsewhere. SLA dues may or may not be higher than those of associations whose aims are similar. If, however, enough of us decide that this Association does not fulfill our goals within it, there may not be an SLA.

Susan Kamm
P.O. Box 5033
Inglewood, Calif. 90303

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* ED. NOTE—SLA's IRS status is not an issueless issue; a change in Association status is at the heart of many of Miss Kamm's suggestions and would provide the means by which to accomplish them.

Cardiovascular Research

The contents of the July 1971, Volume 5, No. 3, issue of this journal are set out below

This journal is published in association with the British Cardiac Society. Cardiovascular Research is mainly for the publication of basic research. The range of subjects covered by the journal includes physiological, pathological, pharmacological, biochemical, haemodynamic, surgical, and similar advances in the study of the heart and circulation. This journal is published quarterly in January, April, July and October.

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A Computerized Conspiracy

I am not so book-minded that I am anti-computer, but H. B. Landau's "Can the Librarian Become a Computer Data Base Manager?" (*SL*, March 1971, p.117–124) has confirmed my suspicion that information scientists are conspiring, purposely or incidentally, to overthrow the Library Establishment and replace it with the Computer Information Storage and Retrieval Establishment.

This conspiracy is most evident in the proposal of the Special Libraries Association/American Society of Information Science merger, which would lump special librarians, information specialists, and information scientists—each having widely divergent educational backgrounds and vastly different languages—into one organization that would be aptly described as a "Tower of Babel."

The people advocating the merger are what Robert Boguslaw calls "The New Utopians" (see his book with the same title). Books and computers do not mix; therefore, neither do their tenders. Of course, both are needed, but not necessarily in the same physical place nor necessarily with the same manager.

And both books and computers are *means* to information, each with their own distinct, unique identities and capabilities which have a sanctity that should not be impinged upon by the other; likewise, therefore, for special libraries and computerized information centers which should co-exist on a separate-but-equal basis, supplementing and complementing each other.

Integration of SLA with ASIS would mean slighting books and libraries, even aiding and abetting the Information Science Cause (which itself is only an evolutionary refinement of the Library Science Cause and so should be subordinate to it instead of vice versa)! I advocate a coordination of SLA and ASIS by equal representation with a federation named the American Society for Special Libraries and Information Systems.

Moreover, there should be recognition by documentalists/information scientists, as there is by the Council of Social Science Data Archives, that textual materials are as important as quantifiable data, as well as vice versa for librarians. There are similarities between libraries and computer data bases, as Landau points out. However, as Lyle F. Schoenfeldt states in his "Data Archives as Resources for Research, Instruction and Policy Planning," in the July 1970 issue of *American Psychologist* (25: 609–616), "unlike libraries for *published* results [emphasis mine], the repositories for storing and circulating the tremendous quantity of data constantly being gathered by behavioral science research workers are almost wholly dependent on the *unique* capabilities [emphasis mine] of the computer."

Why then a forced marriage between books and computers, between SLA and ASIS? Why are information scientists and a growing number of special librarians so computer-minded that they are anti-book and attempt to convert librarians into information scientists?

To Mr. Landau's question, Should librarians become data base managers? we SLA members must answer "No." Also, if the SLA/ASIS merger comes to be as planned, we must withdraw our membership.

Eugene D. Ruskin
Adolf Meyer Center
Decatur, Ill. 62526

Praise for a Worthy Publication

On Jul 14 we received *Directory of Gratis Controlled Circulation Journals for the Chemical and Allied Industries.* Please extend my congratulations to B. L. Emory and Robert T. Bottle. This is a terrific publication and everyone in the Upstate New York Chapter is to be commended on taking on this project. During the past few years we have noted the great increase in Controlled Journals. However, I do remember that before the War controlled circulation gave us plenty of problems. Many times they would just quit with no notification whatsoever. There would be no reply to answers regarding subscriptions; how you could get on a mailing list again; or how you could even pay for them. Apparently this is one of the cyclical phenomena appearing in the publishing field. And again the old problems are appearing. I would be curious to hear any feedback from users of this publication, as well as anyone writing any papers or sending in reports on the problems they have with the publishers. Again let me offer my compliments for I do think it is absolutely a terrific publication and certainly appreciate having it made available.

Gretchen D. Little
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Names on the Land

Richard Dillon

California State Library, Sutro Branch, San Francisco, California

■ The study of America's geographic place names offers a sometimes, though not always, interesting commentary on the country's history.

POETS, from the time of the glover's son of Stratford-upon-Avon to James Joyce, scribbling in his Martello Tower beside Dublin's shallow bay, have asked the rhetorical question: "What's in a *name*?"

If he would, the card-carrying special librarian could answer—"a'plenty," if it is a name upon the land to which our Pindar refers or, at least, a toponym once-removed and situated on a map or chart. For America's cartographic place names, and the physical concepts they evoke, not to mention the intellectual, spiritual and emotional connotations they bear, are keys which unlock what we might call the grassroots history of America. They are guides to what this country has been all about; not to the history of textbook exercises, to history for history's sake, or the arcane pedantry of fusty professors. No, these names open up the true and fascinating story of the land and the men and women who crossed it, settled it, and, alas, more often than not despoiled it.

Evolution of Place Names

No map librarian with any romance in his or her soul, or even with a dollop of intellectual curiosity in his professional make-up, can consign the alphabetic symbols which we see on a map to the company of its hachures or isobars. Place names do more than refer one to temperatures and altitudes; they identify flesh and blood, they signal hopes, fears, hate, betrayals, love, courage and compassion. In a word, they are guideposts to mankind's fortunes and follies as identified and recorded by the namers of this country. Such is the true meaning of place names.

As is the case with books themselves, of the making of place names there is no end. Look at Levittown, Marina del Rey, Sea Ranch. The process continues around us every day, particularly in this age of developments that erupt on swamp and scab-rock alike. How often they bear pennydreadful poetic names, like Terra Linda or Linda Mar, in which the felony is compounded, as it were, by the speculators' ignorance of Spanish and their confusion of that tongue with both Latin and Italian.

New names are born as old ones perish. Some are dying for lack of use, as in the case of Nevada ghost towns dating back to vanished mining booms, or certain bypassed and shuttered railroad towns. Others are killed by a simple lack of favor or a change of attitudes. Some are murdered, like Cape Canaveral (*Canaveral* in Spanish, meaning "canebrake").

This displacement, or re-layering of names, is much less objectionable when it is the result of natural phenomena. A case in point would be Captain Jack's Cave in California's lava beds in the extreme northeast corner of the state. This volcanic cavern was originally known, at least to the scattered white cattle ranchers of the area during the 1850's and

1860's as Ben Wright's Cave. Wright was a kind of frontier Cincinnatus and a squaw man who was also an Indian fighter. He won fame and notoriety by his punitive expedition against the Modoc Indians in 1852 after they had butchered some emigrants near Tule Lake. He first tried to poison them by lacing gifts of beef with strychnine. When this plot failed, he fell back on Colt six-shooters and wiped out a whole band of Modocs. During the campaign he (presumably) camped in the cave and, by natural causes, his name became attached to it. But during the Modoc War of 1873, when Captain Jack and fewer than 60 warriors held off an American Army of almost 1,000 men backed by howitzers and mortars, the chief made the cave his headquarters. Not only did his fame dwarf Ben Wright's, but it was more appropriate that a natural site in his homeland should take the name of the Modoc chief rather than that of a brutal scalp-hunter of Wright's ilk.

How Many?

George R. Stewart, in his fine new dictionary and *vade mecum* of the onomastist (or student of names), estimates that every square mile of the U.S. boasts at least one named place. This means that map librarians who wish to enhance their professional competence by penetrating cartography and geography to reach the underlying layers of history beneath the lines of latitude and longitude must grapple with 3,500,000 names on the land. To be completely professional, we should have a nodding acquaintance, too, with the obsolescent, obsolete and downright forgotten place names—those no longer in common use. There are a mere million of these.

This figure of 3½ million names represents a low density of nomenclature when compared to Europe's terrain. Names do not lie half as thickly over our land as most of us think. It is also a misleading figure; the total to be grappled with is really much smaller. The ultimate figure can be sharply reduced because many place names are so obvious, so self-explanatory. There is nothing to learn about them. Then, too, the number of names we are left with can be again reduced by the simple application of common sense weeding techniques.

First, banality and redundancy reduce the problem to size. The meaning of a hypothetical Deep River, Mississippi, and the equally obvious and unimaginative Deep River, Wyoming, should not prove terribly puzzling. And just think how many Sand Creeks (pronounced Sand Cricks, to be sure, out West) there are beyond the 100th meridian alone.

Thus, it will be a comfort to map librarians to know that George Stewart estimates that the number of individual names, per se, on the landscape, when we ignore the endless repetition of names between Cape Cod and Cape Mendocino, is only 175,000.

If this total of labels for specific natural features or places of habitation seems still a bit unhandy, it can be drastically cut back by the simple process of subtracting those names on the land which are derivations of personal names. Patronymics, when applied to the surfaces of maps, can, at times, be interesting if, as in the cases of Boonesboro, Kentucky, and Fort Worth, Texas, they evoke the history and, particularly, the biography of an area. But, by and large, they pall beside the more descriptive and colorful terms of our onomastic glossary, like Freezeout, Moose Jaw and Hardscrabble. Who feels his interest piqued, his pulse amplified, by such names as Jacksonville, Dallas or Daly City? (The latter is a suburb of San Francisco.)

*

Once in a great while, such a place name can be intriguing. This is especially so if it suggests a puzzle, or a mystery, as does the name on a wide spot in the road in California near old Fort Tejon on Highway 5. This is the site called Lebec. Erwin Gudde's book, *California Place Names,* does not tell us much, only that the place takes its name from an unknown California pioneer

The bleak Nevada desert is a strange place for a name memorial to California's first bibliophile, Adolph Sutro. But the founder of the Sutro Library (now the Sutro Branch of the California State Library) is remembered in the Sagebrush State—and far from the crumbling ruins of the ghost town of Sutro, and the Sutro Tunnel which he dug to drain the mines of Virginia City—because he was a genuine pioneer of Nevada. It was in the silvery Comstock Lode that the San Francisco bookman "made his pile."

Nevada State Highway Dept. Photograph

* *

buried there. Gudde cites an 1853 report of the Pacific Railroad survey: "One of the large oaks bears the following inscription, cut deeply into the hard wood —'Peter Le Beck, killed by a bear, Oct. 17, 1837.'" Dr. Gudde refers to Le Beck as "the unfortunate traveler of whom no other record exists." In 1949 Dr. Raymund Wood, now of UCLA's School of Library Service, devoted an entire, if slim, book to the subject but came away still puzzled by Le Beck's identity. Who was he? Almost certainly a French Canadian fur trapper with a Hudson Bay party, to be wandering the Tehachapi Mountains of Southern California as early as 1837. A little more digging into such volumes as the Abbé Cyprien Tanguay's *Dictionnaire Genealogique des Familles Canadiennes* will probably turn up Le Beck's ancestors, if not the trapper himself. But it will be useless to look under Le Beck or the more Frenchified current map usage, Lebec. The far more common name of Bishop—Leveque or Levesque—is the place to look for the mauled-to-death Canuck, buried by Anglo mountainmen ignorant of the spelling of the French names they had bravely learned to pronounce while on the trail with their Gallic comrades.

*

Simple transfers of established European place names to America are seldom of much interest, witness Boston, Portland, Reading. And while concocted, made-up names may appeal to some, they often are pretty shallow in terms of meaning as well as age. Then, too, their associations, jests and puns of yesteryear can be a bore today. Surely the ugliest name in New Mexico is Truth or Consequences. A goodly number of these contrived names are inspired by state lines, hence Texarkana; or even by international borders, as is the case with Mexicali (Baja California) and Calexico, California.

But most librarians as well as laymen will probably be interested in colorful descriptive names, such as Red Dog and Hardscrabble; in Biblical names, garbled or not; in poetic place names like Lonesome Valley, Arizona, Emerald Bay on Lake Tahoe, or Louisiana's Ile Derniere, or Last Island. Interesting, too, are the literary allusions, like Ione and Ivanhoe, California, and American names of foreign origin—Prairie du Chien, Socorro, and, conversely, those of native-American (Indian) origin which have survived — Chickahominy, Pascagoula and Wenatchee. Even if these words did not have meanings (and they do), they roll off the lips beautifully.

*

For some reason, our Spanish and French forefathers in this country did a better job of translating the gutturals of the redmen into pronounceable language than did the Anglo-Saxon pioneers of North America. Perhaps they had a bet-

ter ear; perhaps it was part of their generally better accommodation with and assimilation of Indian mores, values and usages. The Northerners, more often than not, would replace a perfectly good, but tongue-twisting Indian site-name, substituting a commonplace—but out-of-place—English town name borrowed from the Old Country. And when Anglo-Saxon Americans borrowed Indian names second-hand, via a Frenchified or Hispanized version, like Kansas, Omaha, Zuni, or Nachitoches, they were often more successful than when they attempted to integrate Indian terms directly into the King's English. In the latter case, the South probably did best, with its Tennessee and Wakulla, and the West pretty well with its Tuolumne and Klickitat. But the Middle Atlantic states and New England were either not up to the task or were cursed with naturally ugly Indian place names, like Maine's Pongokwayhaymock Lake. (Blame it on the Algonquians.)

Topography in Names

There are a few rules which librarians can borrow from toponymists for general guidance. First, water is more important in place names than earth or altitude or vistas. The Indians almost never named mountains, mountain ranges or even hills. These phenomena were usually just in the way from their point of view, obstacles to be surmounted or skirted. Often, they were too big as geographical concepts or entities for the Indians to grasp with their point of view. But without water, man cannot live. So the Indians named rivers and streams, or at least those points where their trails touched living water. They had less, if any, interest in naming the whole course of a stream from head to mouth. Ponds, wells, springs and lakes were of major importance to the Indians as sources of drinking water and as hunting areas for game, so they were commonly named. When the Europeans arrived, they followed suit, but their greater curiosity in the area of ideas, as opposed to things, led them to bestow names on mountain ranges which extended far out of sight over the horizon, and to apply the same name to water hidden from view in a deep canyon that they gave to it when it appeared through a cut in the mountains and entered a flood plain.

The Etymology

Another point of general information is that the meaning of many more European place names has been lost than is the case with our much younger American land names. For this reason, etymology figures more strongly in the study of Old World place names than in ours. There, the question put is usually, "*What* does the name mean?" Here, it is more often, "*Why* was it thus named?" In the States, the meaning of a name may be clear enough but the motivation for the name is often missing from the records. As George Stewart points out, "The European onomastist argues from probability; the American from evidence."

Our chore, on the other hand, is complicated by the American character. This introduces such factors as exaggeration, understatement and other similar distortions of reality, irony, jokes, punning and the coinage or concoction of non-

* *

A good example of the kind of place names which persist in libraries long after they disappear from maps and the surface of the earth is Mormon Island, California. Once an important Gold Rush digging of '49 on the South Fork of the American River, pioneered by LDS (Latter Day Saints) prospectors, it became a ghost town and then was obliterated by Yankee know-how (i.e., "progress") and the waters rising behind the Folsom dam.

sense names which really mean nothing. And finally, an anti-intellectualism throughout much of our history has resulted in a paucity of dependable written records, especially on the moving frontier. Names on the land may have a short life in an oral tradition. To persist, to be made lasting or permanent, they usually must be placed on maps or, in lieu of that, recorded in manuscript diaries and journals if not in imperishable printed texts. Too often, books of the soundness of Stewart's *American Place Names* or his earlier *Names on the Land* will leave the reader with only the frustrating explanatory phrase "Origin unknown."

The Names Change

Changes of name sometimes pose problems of identification since maps seldom carry, parenthetically, information on the earlier names of a townsite. In California, for example, Dogtown became Butte Mills and then Magalia. Slumgullion transformed itself into Melones as it bragged, in Spanish, not of melon-sized nuggets but of the melon-*seed* sized gold nuggets found there. Perhaps Bellflower takes the onomastic cake in the Golden State. Before it settled down to that name it ran through four others—Willows, Wilderness, Firth and Somerset. The Victorian decades saw zealots of gentility change names which they felt were in bad taste. An early Bowdlerizing of our place names saw the mining town called Bedbug and Dead Dog (telling commentaries on the Gold Rush environment) "improved" into Ione, as a tribute to the heroine of Bulwer-Lytton's novel, *The Last Days of Pompeii*. Half-way between its first and last name it had been called Freezeout which may suggest blizzards and snowdrifts but actually recalls a once-popular card game of that name, as Show Low, Arizona, reminds us of the game called Seven-Up.

Historic Fiddletown in the California Mother Lode was renamed Oleta in the proper 1870's and did not win back its real name again until 1936. During the Modoc War, the only real battle won over the Indians by the Army took place at a lakebed which simply could not be mentioned in newspaper accounts. So the name was changed, on the spot, to the dull but descriptive name of Dry Lake, in place of the original, graphic name bestowed on the waterless playa by saddle weary cavalrymen, Soreass Lake. Alas, it is Dry Lake today on our topography sheets.

And Mistakes Are Made

Plain old mistakes present us with an interesting if confusing facet to place naming. The story of Lebeck is one. Another California place name simply does not exist at all though it is recorded in at least one history book. When the anonymous compilers of a history of Colusa County interviewed an old-time sheepman, Rufus Burrows, circa 1880, he told them that he had come overland by way of Truckee, past Cambol Camp. Had the primitive oral historians known their California history better, or had they listened more closely, they would have realized that Cambol Camp was Burrows' slurred "Cannibal Camp." His now-published memoirs reveal that he never forgot the experience of burying

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California Historical Society, San Francisco

some of the bones of the tragic Donner Party, cannibalized near Donner Lake in the High Sierra during the winter of 1846-47.

Names Are Not Always What They Seem

Jewel is the meaning of the Bijou, California, but not of Montana's Bijou, though the latter has a French language origin, too. It is an Ojibway or Chippewa corruption of the greeting of the French Canadian fur traders, bonjour. True Love Creek in South Carolina does not commemorate an amour but is a joking analogy, for the stream runs neither smooth nor straight. King of Prussia does not memorialize a visit of that Teutonic monarch to Pennsylvania, but rather reminds us of a once-famous pub, or coaching inn. Ajo, in Arizona, signifies garlic in Spanish but the name, most likely, comes from the Papago word for "paint," *au'aujo,* which even the usually "good-eared" Spaniards could not handle.

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Toponymy is not an exact science. You simply cannot jump to conclusions in the field of place names. You might think that Bullhead Creek, California, Bullhead, South Dakota, and Bullhead City, Arizona, are all derived from the catfish-like creature. Not the case. Only in the case of the California stream is this so; the South Dakota town was named for an Indian policeman of that name who was killed there, the Arizona site for an oddly-shaped rock formation. Bigfoot, Texas, is not a farflung tribute to the Klamath River's ape-man-like monster (the *yeti* or *sasquatch*) but honors Bigfoot Wallace, plainsman of Texas independence. Embarrass, Minnesota, is not a disconcerting town but it was the site, years ago, of many a logjam—*embarrass* in French—in the nearby river.

One of the great garblings of all time has been with Colorado's Purgatoire River, from the Spanish El Río de las Animas Perdidas en Purgatorio—the River of the Lost Souls in Purgatory. It was so named for Catholics killed by Indians without chance for absolution. French fur trappers changed it and shortened it to the Purgatoire. Local ranchers could not even mouth that term so it has come down in local folk etymology not as the Purgatoire but the Picket-wire.

Deutl Bogt, Wedge Bay, in New Amsterdam became Turtle Bay in New York. Barnde Gat or Surf Cove became, of course, today's Barnegat. Camphora, California, has nothing to do with the Malaysian camphor tree. It simply docu-

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John Charles Fremont was not the "Pathfinder" he has long been cracked up to be, but Chambers of Commerce faithfully fixed his surname all over the maps—and landscape—of the West, from Iowa to California. In the latter state, the error is really compounded at Gabilán Peak, which has a second name of Fremont Peak. According to local historians, the wrong hill has been selected, marked and turned into a state park; they claim the bellicose engineer made his fortified camp on an adjoining height.

Union Title Insurance and Trust Company Historical Collection

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ments the difficulty Mexican gandy dancers had in saying "Camp Four" on the railroad.

The Dull and the Flamboyant

Unimaginative name-givers cannot disprove the maxim of Francis Bacon, who said of a name—"it carrieth much impression and enchantment." Dull place names are, thankfully, more than counterbalanced by the work of gifted names. These place names "sing" even when you do not know anything of their background. Perhaps the most sonorous of all is Sonora, California. But consider Possum's Trot, Florida; Peculiar, Missouri; Sopchoppy, Florida; Wounded Knee, South Dakota; Bad Axe, Michigan; Blowing Rock, North Carolina; Medicine Bow, Wyoming; Bowlegs, Oklahoma; Buckskin Joe, Colorado, and California's Coarsegold and Copperopolis. The last-named will be cacophonous to some listeners, but it cannot hold a taper to many of the ugly place names, unpleasant either in sound or meaning. In Texas are found such names as Asphalt Belt Junction, Creechville, Cistern, and the gruesome Baby Head Creek, recalling the spot where Comanches stuck the decapitated head of an infant emigrant on a stick. One would think that they might at least have camouflaged such names as Arizona did with its town of Rattlesnake (Cascabel, in Spanish) or as California did with Agua Hedionda—Stinking Water.

Again, the danger in place naming comes as much from flamboyance as dullness. Phoney poetic names abound on the map, like the ubiquitous Lover's Leap and Yosemite's 'orrible trio, Happy Isles, Inspiration Point and Bridal Veil Falls.

The Double Meanings

Sometimes, a place name will have a hidden meaning or a double meaning. Florida is a case in point. It was La Tierra Florída to the early Spaniards, of course, a well-named "flowery land." But the name is not only descriptive of its lush vegetation and colorful botany. The name actually serves as a clue to the date of the state's discovery by Don Juan Ponce de León. It was only a few days after Easter of 1513 that Ponce de León made his landfall and Easter, to the Spaniards, is the most florid or flowery of their holy days—hence it is known as La Pascua Florida.

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Socorro, on the Rio Grande in New Mexico, is an interesting case. It is not exactly named for what it should be named. That is to say, it lies at a point on the Río Grande, also called the Río del Norte and the Río Bravo by Mexicans, where the river resumes a north-south line after a big bulge to the west. For many years, travelers on the Santa Fe to Chihuahua Trail cut across the desert there in a shortcut which was often disastrous. So bad is this area that it still bears in atlases the name Jornada del Muerto. This is almost always slightly mis-translated as Journey of Death, whereas it really means Journey of the Dead Man or, better, Dead Man's Journey. Socorro is said to have received its name because the corn available there from Indians saved the lives of Don Juan de Oñate, the conquistador, and his starving exploring party of 1598. More often, however, Socorro has offered succor to travelers dying of thirst, rather than starvation. Even in modern times, up to the automobile age, people have died in that bleak desert when their pick-up trucks or jalopies have broken down far from Highway 85-25. Some were driven to drinking their radiator water—and still they died.

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Even with the repetition which the Board on Geographical Names deplores so much, the impression, on viewing a map of the USA, is one of a natural variety of place names, not monotony. Many foreigners, especially travelers and

writers, have noted this. They love to roll off "Yosemite," "Missouri" and other Indian names, so alien to European culture. The variety and range of the names found on maps verify what George Stewart has pointed out, "The work was shared among all classes from border ruffian to Boston Brahmin." Helen Bevington, in reviewing Stewart's book for the *New York Times Book Review,* reiterated this point, which suggests the importance of names on the land, names on our maps, to any study of American history and folklore: "By our place names we are known. They are America, reflecting the history of the American people, honoring pioneer and hero alike, and the ordinary man named Jones."

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The Role of the Librarian in the Binding Process

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■ The fundamentals of binding are described in order to provide a basic understanding of the process so that librarians can exert more control over the proper binding of the library's books.

TRADITIONALLY, and perhaps even unknowingly, librarians have allowed themselves to take a secondary role in the binding process. They have confined their interest and proficiency for the most part to the bibliographical aspects of binding, while leaving the fundamental processes to the binder. They have tended to concern themselves with the exterior of the book—printing of author and title, buckram color, print style and the like—while the binder assumed responsibility for board weight, end papers, sewing, gluing, rounding and backing, as well as the other vital aspects of the process. In short, the librarian made the binding slip and the binder made the book.

It seemed, actually, that each was playing his proper role. After all, the librarian knew about bibliography and the binder knew about bookbinding. And to a great extent, there was justification for this in the past, because at one time the typical binder was a craftsman, one who went to considerable effort to turn out quality work—but in relatively small quantities. By allowing themselves to assume such a secondary role in the binding process today, librarians, depending to a greater or lesser extent on the type of library involved, have had their books poorly bound.

This is not a matter of blame, but rather a matter of looking at the problem of book preservation from another point of view and, in addition, conceding what is obvious—you almost always get exactly what you pay for. From the binder's point of view, he binds books as well as he can, *within the limits imposed upon him by forces over which he may or may not have any control:* the state of the technology, his competition, his staff, the money market, his customers (not only the amount they are willing to pay but the state of their knowledge), and the fact that he himself must make a fair return on his investment and labor, and, indeed, in a corporate structure, must satisfy the owners. From the librarian's point of view, there are three paramount considerations, or there should be: the cost of binding, the useability of the book after binding, and, finally, a consideration which, regrettably, is too often overlooked, the durability of the book in the long run.

If we concede that the binder charges a fair, competitive price for his product, why then should librarians, who are experts in bibliography but not in bookbinding, concern themselves with the useability and durability of the binding? Does it not follow that if the binder as an expert turns out the best product he can at a fair price, these other considerations will follow? I submit that it does not. It depends entirely on what

we mean by "best product." That which is a "best product" to the binder may be, and all too frequently is, an undesirable product to the library. We might qualify our statement and say that the binder is turning out a more or less acceptable product *at a price librarians are willing (or able) to pay.* But that is all we can say. Both share in the blame, and perhaps it is we librarians who must assume most of the criticism, because all too often we insist on the lowest possible prices without first considering that, while we may indeed be saving pennies today, we may be spending dollars in the future.

If we librarians are willing to spend the time and a little more money, our books will be bound better, will last longer, and, in the long run, we may actually save money. No book need be poorly bound; or, to put it another way, no book need be bound in any manner less than that which is optimum for that particular book.

We cannot, however, simply assume that the binder is going to turn out a product that we really wish to have. Before understanding why not, we should recognize what forms of library materials we are considering. A few examples follow:

Varying Types of Publications

▶ There is the *typewritten thesis* (or any publication issued in single sheets) with, hopefully, a generous inner margin (1" or more). Since it is constructed of individual leaves, with reasonably good, smooth paper, it does not really lend itself to anything other than oversewing (or Smyth-Cleat sewing, if that machine ever becomes available and lives up to its expectations) and, in fact, considering the all-important inner margin, it should be oversewn.

▶ Then, there is the *best selling novel,* issued by the publisher, as is apparently the universal practice, in an inadequate binding. Since this book will probably be very heavily used for a time and then perhaps put away never to be read again, it should (assuming it has the necessary inner margin) receive the strongest possible binding, which is oversewing. In fact, there is much to be said for binding this type of book before it is loaned to the public the first time, as this will prevent it from becoming damaged beyond the point of economical rebinding. (For historical purposes, the library may wish to keep one copy in its original form, perhaps in an area of restricted circulation.)

▶ There is the *adhesive bound paperback,* one the library wants to retain more or less permanently. (More or less because the paper used in the manufacture of low to medium priced paperbacks is far from permanent.) It, too, is in individual leaves, but instead of a generous inner margin, it is likely to have a margin of ⅜" or less. About the only thing the library can do with such a monster is to shelve it unbound, knowing it will probably be damaged, or have the bindery apply an adhesive binding and hard cover casing—sometimes referred to as "perfect binding"—which means the leaves are "permanently" secured by a polyvinyl adhesive. This form of "binding" consumes less inner margin than does oversewing.

▶ There are those *periodicals with absolutely no inner margin,* i.e., with bled illustrations or printed matter. If we employ oversewing (Smyth-Cleat sewing probably does not have the strength required for periodical binding and adhesive binding definitely does not), part of the bled illustration or printed matter will be obscured. Whenever possible, a periodical of this type should be sewn through the folds on unbleached linen tapes. "Whenever possible" is a necessary qualification, because if the issues are not made up in folded sections, sewing on tapes is not possible, unless the leaves are hinged, which is very expensive.

▶ Last is the *reference book,* with, let us say, an inner margin of ½". We anticipate that it will be heavily used and, in addition, will be Xeroxed frequently. Consequently, we must have strength in the binding that we cannot obtain from Smyth-Cleat or adhesive binding, as well as an adequate inner

margin and flexibility that we cannot achieve with oversewing. This book, too, should be sewn through the folds on linen tapes.

Automation in Binderies

Why is there a problem? Binders—probably with few exceptions—know that books with bled illustrations, narrow inner margins, poor paper, and unusually thick books, as well as expensive books, beautifully made books, books

designed for special purposes, and the like, should be bound in certain ways. That is, the owner of the bindery—who may well be a fine binder in his own right—may know, but do his employees know? His workers, the ones who do the cutting, sewing, trimming, and other things, may be machine operators and nothing more. One need not be a fine binder and a book expert in order to operate a grinder. If the bindery binds 500,000 volumes a year, or even 100,000, how much time is spent, or can possibly be spent, in deciding how one book is to be bound? Furthermore, how can anyone in the bindery know what use will be made of the book, how often it will be pressed down on a copying machine, how valuable it is (in monetary terms, or simply to the particular library), or how long the library wants to keep it? Today's commercial bindery simply cannot take the time to give individual consideration to any one book, consideration which every book needs and deserves. Therefore, it is imperative that librarians become sufficiently knowledgeable so that they can instruct the binder in the manner in which their books are to be bound. They must do it because there is nobody else who is going to do it. With PL 480 and Title IIC programs, along with library governing boards who seem to be becoming increasingly more generous, an increasing number of libraries and expansion of those already in existence, many more books are being acquired and bound. And even if only a relatively few libraries are enjoying increased prosperity, all of us are caught in the same squeeze the binder finds himself in—namely, how to bind hundreds of thousands of books where before he bound tens of thousands. And while some binderies are maintaining their present volume of operation, the trend seems to be toward a concentration of volume in a relatively small number of binderies. Large volume binding, as in almost any other production enterprise, inevitably means more and more mechanization. Mechanization is extremely costly; therefore, a machine must be able to process a book in virtually the twinkling of an eye, otherwise it does not pay for itself. Unless the trend is reversed, the human hand will soon not touch the book between the time the binding process begins and the time the book is returned to the box in which it arrived. This may be good for the binder, but it probably will not be good for the library; it may well be the ruin of the book.

Who Must Make Binding Decisions?

It follows, then, that if the binder cannot take the time to consider the individual book for what it is—a valuable artifact and the very reason for the library's existence—then librarians must. I do not mean that everyone on the staff must spend hours deliberating over every book. What the library can and should do is to establish criteria which would cover all books to be bound. These criteria would include inner margins, condition of the paper, expected use, format, the monetary and intrinsic value of the book, the expected useful life of the book, the function of the library, and other factors.

Before this can be done, however, the librarian who does not know the book as a physical object, or the binding process, must acquire this knowledge. This must be emphasized. A librarian with no "feel" for binding can no more ac-

complish the desired objective, i.e., preservation of the library's resources, than can a librarian with no "feel" for bibliography accomplish the desired objective of bibliographical control of those resources. Unfortunately, there are few opportunities for the librarian to learn about the book and binding. If possible, every librarian who expects to be involved in preservation should attend at least one of the seminars on preservation given around the country almost every year. He should spend several days in commercial binderies which, with very few exceptions, welcome such visits. He is not visiting the bindery to learn how to bind books, but simply to learn how the bindery does it. Hopefully, in the near future, the Library of Congress will have its own book conservation training program in operation, and it may be possible to participate in seminars there.

Since it is not expected that the librarian will actually become a book binder, but only knowledgeable as to what constitutes good binding practices, it is possible to acquire considerable knowledge by means of reading. There are a number of excellent volumes on bookbinding, and, though most of them are concerned primarily with hand binding, they are nonetheless excellent sources of information. A selected list of readings appears at the end of this paper.

It is of the greatest importance that the librarian know the structure of the book, not only because it is important for its own sake, but because it is the only way in which to really understand the critical aspects of bookbinding. Furthermore, this knowledge will allow the librarian to talk to the binder in his own language. For example, even though the librarian will probably never be expected to make an end paper, he should know the purpose of the end paper, how it is made, and whether it should be glued or sewn to the book. Similarly, the librarian should know the different methods of securing leaves or signatures, because, depending on many factors, different books must be sewn (or otherwise attached) in different ways. The librarian should know something about the rounding and backing of a book and should, in particular, be able to identify cases in which it has been poorly carried out, because a book that has been improperly rounded and backed will generally break down long before it otherwise would.

It is important to the success of any preservation program that the person concerned know something about the papers used in book manufacture. He need not have fathomed the mysteries of the cellulose molecule, but he should know how papers are made, how they are sized, what makes them deteriorate and become brittle, and how brittleness may be retarded, and he should know when it would be better to adhesive bind, oversew, or hand-sew a certain paper.

Analyze Each Book

Now the librarian is educated in matters of binding and preservation and is ready to assume his proper role in the preservation process. How does he go about it?

His role should center around the book as a physical object and as an intellectual entity. Before establishing his standards and specifications and before even deciding whether any given book is to be bound at all, he should ask himself a few questions. All of these questions should be answered with the idea of relating the preservation program to the purpose or function of his own library.

▶ What is the monetary value of the book, that is, its replacement cost? One would not normally spend five dollars to bind or rebind a two dollar book, although, admittedly, there are cases where one would. The important point here is that it might be preferable to purchase another copy, rather than bind the one

presently owned. All cost factors must be carefully weighed. If the book is badly mutilated, and will require considerable mending (for which binders charge from $3.50 to $5.00 an hour), it might be more economical to buy another copy, if it is in print, or a reprint edition, if it is not. On the other hand, if the copy in hand is unique to the area, it might be worthwhile to spend a great deal to preserve it in its most useful form.

▸ How many copies does the library own and how many does it really need? This is not as factitious as it may seem. All too often, a book is whisked off to the bindery without a glance at the shelf list.

▸ What is the anticipated use of the book, both in the short and long run? If it is a high school textbook, and will be superseded in a few years, give it the strongest possible binding (oversewing) because you are not very concerned with long term durability. But if it is a book that will be useful for many years, or a classic in its field, or a beautiful and/or expensive book, spend more on having it bound. Have it sewn through the folds. Also, if it is a book that is likely to be photocopied, consider flexibility to be as important as strength. Again, sew it through the folds. This is particularly important for those libraries with coin-operated copying machines.

▸ What is the size of the inner margin? A volume with no inner margin, or very little margin, must be treated differently from one with a generous inner margin. My own study has indicated that about 6% of the periodicals acquired by medium and large university libraries in the U.S. have no inner margin (bled illustrations, etc.), nearly 15% have inner margins of less than 3/8", which is too little for successful oversewing, and slightly more than 40% have inner margins of less than 5/8", which is the bare minimum for oversewing. Slightly less than 10% have inner margins of 1" or more, indicating that fewer than one periodical in ten is published with any thought given to long term preservation.

▸ What is the condition of the paper? This applies to relatively new paper (original binding) and to older paper (rebinding). If it is basically poor paper, or paper on the verge of brittleness, and the book is not very valuable, consider filming in lieu of binding, because in a few years it will probably have to be filmed, anyway. If the book is valuable, perhaps unique, have it taken apart and deacidified (and perhaps laminated) before attempting to bind it. In general, with all factors considered, strong papers can be oversewn; weak papers should be sewn through the folds.

▸ Last, and probably most important: What is the collection building policy of the library? If the policy is to keep at least one copy of everything acquired, the problem of what to bind disappears, but the problem of how to do it becomes enormous. On the other hand, if the library discards superseded editions, and a new edition is expected, the present edition need not be rebound. If the library keeps only the last five years of a

serial title, it may not be worthwhile to bind or rebind a 1966 volume.

Thus, specifications should be based on use, long term (historical) value, monetary value, condition of the paper, inner margins, the collection policy and function of the library, as well as any other factors important to the individual library. Above all, do not subscribe blindly to specifications or criteria established for the "average" library. In the field of preservation, there is no such thing as the "average" library.

It is important to write down your own specifications and discuss them with your binder. When you know what he can and cannot do, or will and will not do, you can either compromise or change binders. If your binding must be submitted for bid, it is not only important, it is imperative that you have detailed specifications, and rigid ones at that.

Above all, do not rely entirely on general specifications, another library's specifications or industry specifications. You can and should borrow from other specifications; but however well-intentioned, other specifications, and particularly those drawn up by non-library institutions, are almost always minimum specifications. They seldom take into account different types of books, and they *never* take into account the purpose of the library, that is, the type of library for which the binding is being done. Excellent specifications for one type of library may be terrible specifications for another. In fact, failure to take into account the purpose of the library for which the books are being bound must rank along with poor paper as the two principal factors that have led to the serious deterioration of printed materials in U.S. libraries.

Writing the Specifications

Briefly, we can list the essential aspects of bookbinding that should be written into your specifications.

1. *Collation,* which is an important part of serial binding. You may want to consider collating yourself, rather than paying the binder to do it. Binders, for the most part, do an excellent job of collating, and, in addition, assume responsibility for errors; but they charge quite a bit for it. Weigh the alternatives. If you have great confidence in your serials assistants, put a no-collation clause in your contract and use the money saved for better binding. For a small library it may not be worth the risk (and there is a risk, the degree of which depends on the complexity of the materials involved); for a very large one it may be. At the Library of Congress, where we bind about 55,000 serial volumes a year, we feel it is worth the risk.

2. *Mending,* which includes torn leaves, damaged folds, and the like. You should specify Japanese tissue for tears through the print, acid-free bond paper for other places and for reinforcement, and the type of paste to be used.

3. *Sewing the book.* The method used will depend largely on the format of the book, use, value, inner margins and the condition of the paper.

4. *Preparation for sewing,* which will include treatment of double leaves, inserts, folded sheets, and, if the volume is to be oversewn, how the back (and how much of the back) is to be removed.

5. *The actual sewing of the book.* If oversewing is to be employed, how close to the head and tail of the book the sewing is to go, etc. If the book is to be sewn through the folds, how many tapes are to be used (which will depend mainly on the height of the book—the shorter the length of thread between tapes the stronger the end result) and the width of the tapes.

6. *Maximum thickness allowed,* which applies mainly to periodicals. We have found, for example, that it is not good policy to bind serials in units much greater than two inches in thickness.

7. *End papers,* including the number of free fly leaves, the joint and how the end papers are to be attached.

8. *Trimming.* This is a very important consideration. Some trimming, especially in serial binding, is virtually necessary; but, strangely enough, you almost have to specify that no part of the printed matter is to be trimmed away.

9. *Gluing, rounding, backing and lining.* Specify that the binder must use approved flexible glue, round and back the book properly and line it with approved lining material.

10. *Covers.* Specify cloth or buckram, and the quality of each, as well as the binder's board, including quality and thickness, to be used.

11. *Casing in.* Specify the quality of paste to be used and the general method of pressing the book.

12. *Lettering.* You may wish to specify gold or white foil and the type and type size to be used, i.e., Serif, Gothic, 18 pt., 24 pt., etc. It is better to select one type and size and stay with it.

13. *Records of sets;* that is, rubs or other records for serials.

14. *Inspection for defects.* The binder should inspect each volume before returning it to the library.

15. *Brittle condition of paper.* Actually, you should specify that books printed on poor paper (old or new) are to be sewn through the folds. If the paper is too poor for hand-sewing, the book shouldn't be sent to the bindery at all. The statement about brittle paper should be included, however, so that if a brittle book is sent, it won't be sewn on the oversewing machine.

Prevention

It is important to keep abreast of the condition of books in the stacks. It is easy to forget them, and, so to speak, let them slip away into ruin, and then be faced with an almost impossible task of restoration. If possible, have one or more knowledgeable staff members make a book by book survey, noting each one's condition. This sounds like an enormous task, and it is, but it is not impossible. Even if the task is never finished, and it never will be, it is important to begin it, if for no other reason than to try to convince the budgeters to appropriate a modest sum every year for general restoration rather than to wait for 20 to 30 years and then ask for a huge sum.

You may be asking yourselves how any library, even a large one, can hope to implement a really effective binding and restoration program. Where would it get the expertise, the staff and the money? Well, it takes all three, and perhaps one library could not do it alone. But in preservation and binding there

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exists perhaps one of the most remarkable opportunities for cooperative effort in all of library work.

Cooperation Among Libraries

Cooperation would almost have to be among libraries in the small to medium large range, and which have not been in existence for more than fifty years or so, since relatively old libraries and/or very large libraries have preservation problems that are virtually unique to themselves. That alone, however, would not prevent smaller libraries from benefiting from, and even participating in, research programs. What we are speaking about here, though, is daily cooperation. A group of libraries within an area, each with modest binding budgets, could join together and hire a competent professional librarian, one who either knew preservation, or would learn. This librarian could train staff members of the individual libraries and advise them on matters of preservation. He could coordinate the efforts of the libraries and perhaps avoid some duplication of effort.

Each library could have its own person or persons preparing books for binding, or all libraries could send their materials to a central location for preparation, thus possibly effecting some economies in clerical work.

Cooperation might effect savings for the individual libraries in other ways. A binder, for example, might be willing to offer a reduced price for what is sometimes called "standard periodical binding." Participating libraries agree to a standard lettering arrangement in conformance with volume, height and size. The individual library may choose the color of the covering material it wants to have and the number of issues to be included in one volume; but all agree that ads and covers are to be left in, for example, and all use the exact same binding title. The binder is able to offer a reduced price because removing ads and setting up the volume for printing are expensive aspects of the binding operation.

The Contract

The last and most important item is the binding contract. Whether or not the library is required to solicit bids for the binding of its books, it should have a contract. This is just good business. The contract should include the specifications mentioned previously, as well as delivery schedules (the binder should be able to return books within four to six weeks), performance bonds, insurance (for your materials), transportation, responsibility for improper binding, authority for changes in specifications, subcontracting, and, finally, prices.

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Mr. Roberts *is binding officer, Preservation Office, Library of Congress, Washington, D.C. Presented at a conference on preservation on Nov 12, 1970, during New York Library Association's conference in New York City.*

Air Pollution Information System

Increasing Usability Through Automation

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■ The conversion of an information system containing air pollution related documents from manual to automatic computer-based operation is outlined with emphasis on the increased services to system users which resulted from the conversion. The system was designed and implemented by the Air Pollution Technical Information Center (APTIC), now part of the Office of Technical Information and Publications, Office of Air Programs (OAP), Environmental Protection Agency. The manual system was launched in early 1966; the conversion to computer base was completed in mid-1969.

APTIC is charged with collecting and disseminating basic data concerning the chemical, physical and biological effects of air pollution, and the data on air pollution control. In fulfillment of this mission, APTIC, together with its contractors, regularly screens and acquisitions pertinent documents from domestic and foreign journals, government and industrial research reports, and preprints of significant domestic and foreign technical papers. APTIC's primary users are scientists, engineers, pollution control officers of all government levels, industrial and research investigators from the public sector, and special librarians.

THE MANUAL APTIC system was based on use of Jonkers Termatrex cards, which use optical coincidence for retrieval. The system was designed for conversion to computerized operation with minimal change in the indexing terminology and search strategy. The major processing steps for the manual system are illustrated in Figure 1.

Input

From a list of 4,800 journals compiled from suggestions by federal and state users and other sources, 1,200 "core" domestic and foreign journals were selected for regular screening. All unclassified government and many industrial research reports, and preprints of many domestic and foreign conference and symposia papers, are also screened for pertinent information. In addition to current literature, references from published reports are acquisitioned on demand and entered into the system. Documents are selected for input according to periodically updated criteria specified by system users. When the system was

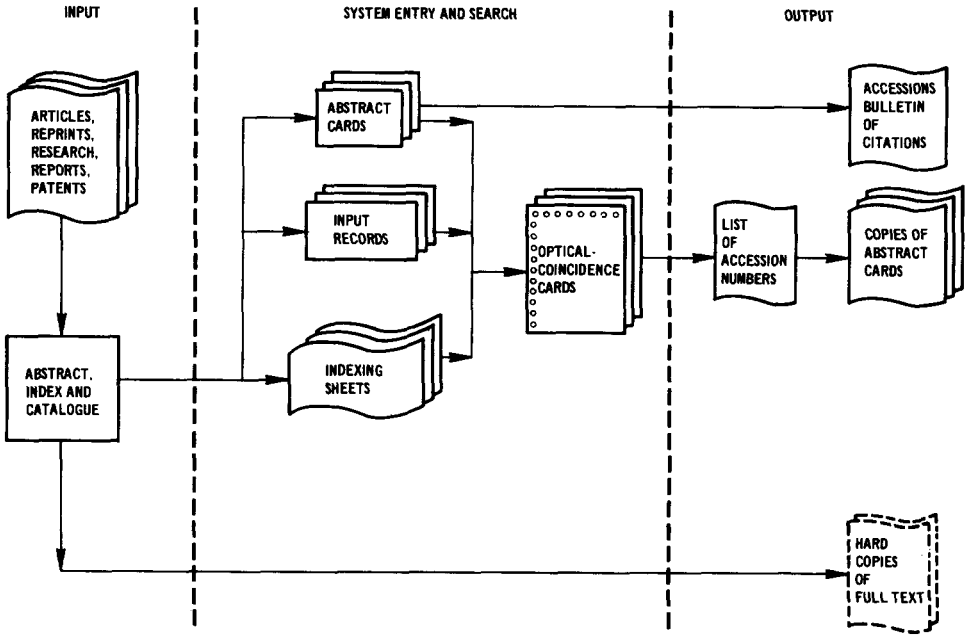

Figure 1. Simplified Flow Diagram, Manual System

converted to an automatic computer-based operation, it contained approximately 12,000 documents.

Three forms were used during preparation of documents for system input. From Xerox copies or tear sheets of documents selected during screening, informative abstracts were prepared on 5″ × 8″ cards, together with standardized cataloging information, including English translations of foreign language titles, and the most directly relevant indexing terms; the abstract cards were filed numerically by accession number. The second input form completed for each document was a multi-part 5″ × 8″ "input record," containing the full citation, accession number, one or more of 14 subject categories, document attributes (whether original work or review, compilation, manual, patent, or other), and method of support (contract, research grant, etc.). This file was used to check new documents for duplication before entering them into the system. The third form consisted of separate preprinted sheets containing the dictionary of acceptable indexing terms.

The indexing system selected for the manual system was based on a set of approximately 1,300 descriptors which comprised the dictionary. The development of the set by APTIC and Science Communication Company has been reported by Myatt, Searle and Farris.* The descriptors were arranged hierarchically into groups, and alphabetically within each major group, and were reproduced on three 11″ × 17″ sheets; the code for the appropriate Termatrex card was printed beside each descriptor as shown in Figure 2. Information analysts simply circled the appropriate codes on a separate set of sheets for each document; an average of 30 descriptors per document were assigned. The analyst indicated the three or four most important descriptors by an asterisk next to the code; these asterisked descriptors were entered on the 5″ × 8″ abstract cards, together with

* Paper presented to Division of Chemical Literature, 157th National Meeting of the American Chemical Society, Minneapolis, Minn., April 13–18, 1969.

the appropriate subject categories. During indexing, the analyst "posted up" a hierarchy by circling the codes for all pertinent descriptors at each level of subordination. For any terms not on the list, 3" × 5" "open-end descriptor" cards were prepared which contained the document accession number, open-end descriptor, context in which the term was used, and the dictionary descriptor closest in meaning to the open-end descriptor. Arranged alphabetically, these cards supplemented the Termatrex cards in demand searches; frequency counts of open-end descriptors are used to help determine whether or not to add them to the dictionary.

Entry into System and Search Procedure

On the Termatrex card assigned to each descriptor, a hole was manually drilled at the coordinate locations representing the document accession number. Since each card has a capacity of 10,000 holes, representing 10,000 document numbers, two sets of descriptor cards were required when the system size exceeded 10,000 documents.

To retrieve documents, the drilled Termatrex cards corresponding to the search descriptor or descriptors were placed in register over a light source, which identified the accession numbers of any documents which contained all the specified descriptors. The searching time was proportional to the number of documents meeting the search specifications.

Figure 2. Portion of Original Indexing Sheet

BK-65	BIOMEDICAL TECHNIQUES & MEASUREMENT
BK-66	ABSENTEEISM
BK-67	ATTACK RATES
BK-68	BIOCLIMATOLOGY
BK-69	EPIDEMIOLOGY
BK-70	GENETICS
BK-71	HEALTH STATISTICS
BK-72	HEMATOLOGY
BK-73	BLOOD CHEMISTRY
BK-74	BLOOD GAS ANALYSIS
BK-75	CARBOXYHEMOGLOBIN
BK-76	HEMOGLOBIN INTERACTIONS
BK-77	IMMUNOLOGY
BK-78	ANTIBODIES
BK-79	ANTIGENS
BK-80	LIFE SPAN
BK-81	MORBIDITY
BK-82	MORTALITY
BK-83	OCCUPATIONAL HEALTH
BK-84	OUTPATIENT VISITS
BK-85	PATHOLOGICAL TECHNIQUES
BK-86	RADIOLOGICAL HEALTH
BL-48	TISSUE CULTURES
BK-87	TREATMENT & AIDS
BK-88	ARTIFICIAL RESPIRATION
BK-89	BREATHING EXERCISES
BK-90	DIAGNOSIS
BK-91	AUTOPSY
BK-92	BIO-ASSAY
BK-93	BIOPSY
BK-94	SKIN TESTS

Output

The manual system provided users with an accessions bulletin and demand searches.

The monthly accessions bulletin listed the accession number and citation only, plus CFSTI or DDC availability, where applicable. This bulletin, prepared manually from the input records, was arranged by major subject category, and alphabetically within each category. The bulletin was distributed without charge to all government and non-government requestors.

Searches also were conducted free of charge. Requests were rephrased into suitable search strategy consisting of acceptable descriptors and logical indicators. The strategy was limited to one "negative" indicator. Thus, a request for

sulfur dioxide *and* respiratory diseases *not* synergism

was acceptable, but a request for

sulfur dioxide *and* respiratory diseases *not* synergism *not* urban area

had to be expressed and processed as two separate searches. The time required to formulate and execute complex searches with a great many terms tended to limit the number of terms used.

Abstract cards for each document number identified by the search were manually removed and copied and, following a check of pertinency, were sent to the requestor. Full-text hard copies were provided, on demand, only to Environmental Protection Agency users, since copyright and practical restrictions limited the ability to distribute them to non-agency users.

The system had two serious management deficiencies: system use statistics, including frequency of use of individual terms, had to be tabulated manually;

and document-number listings by personal or corporate authors, journal titles, or any other grouping all had to be prepared manually.

Users

From the inception of the APTIC system in 1966 until its conversion in 1969, the system users numbered 1,500 recipients of the accessions bulletin; and 1,400 requestors of searches. Of the search requestors, 60% were government and 40% were non-government; and of the government requestors, 80% were members of the National Air Pollution Control Administration.

Time Lags and Number of Searches

At the time of conversion to computer base, the approximate time lag between document publication date and entry into the system was two to three months. An average additional five to six weeks elapsed before the document was listed in an accessions bulletin.

The average time to perform searches was 15 to 20 days, and an average of 40 to 50 searches were run monthly.

Conversion Process

Although the manual system was conceived with eventual computer conversion in mind, many problems had to be solved before the automated system was fully operational.

The basic program set used for the automated system was the Combined File Search (CFS) program developed by IBM. This program, which is keyed to an IBM 360 computer, was already in use by the Food and Drug Administration in an application related to adverse drug reactions. Inputs to the system are from nine track magnetic tape, converted from documents keyboarded on Magnetic Tape Selectric Typewriters (MT/ST). Specific programs were developed to check inputs on the computer tapes for keyboarding errors before the records were read into permanent disk storage.

Under contract, the existing 12,000 records were converted directly to computer tape in a format compatible with the system requirements.

Basically, the dictionary was easily converted to computer use. However, minor revision was necessary to remove ampersands and subscripts, and all descriptors were phrased in discrete form. For example,

cancer
bronchial
lung

were rephrased as

• •

Figure 3. Portion of Revised Indexing Sheet

FIELDS 05, 16 & 17, and 18

Write the appropriate number in front of each item.

METHOD OF SUPPORT (05–MAX 1; ENTRY MANDATORY)

CONTRACT	INHOUSE
FEDERAL	PROG GRT
FELL GRT	RES GRT
NONE	

CATEGORY ASSIGNMENT (16-1 & 17-MAX 2)

Use 16 for primary category, 17 for secondary category(ies).

GENERAL
EMISSION SOURCES
ATMOS INTERACT
MEASUREMENT METH
CONTROL METHODS
EFFECTS–HUM HLTH
EFFECTS–PLANTS, LIVEST
EFFECTS–MATERIALS
EFFECTS–ECONOMICS
AIR QUALITY MEAS
LEGAL AND ADMIN
STDS AND CRIT
BASIC SCI-TECH
SOCIAL ASPECTS

DOCUMENT ATTRIBUTES (18–TOTAL MAX 5)

Original Work (MAX 2)
THEO
LAB
FLD

Review (MAX 1)
TECH
GEN

Type of Publication (MAX 2)

COMP	COLL
DIR	MANL
BIB	GLOS

cancer
bronchial cancer
lung cancer

Clarifying words were added as necessary. For example, to distinguish "cyclones" in a meteorological sense from wet cyclone scrubbers (used to remove air pollutants), the former was clarified as "**cyclones (atmospheric).**" The Termatrex card codes were deleted and the subject categories, document attributes, and method-of-support designations were added to the indexing sheets (Figure 3).

APTIC and its contractor for input preparation, The Franklin Institute Research Laboratories' Science Information Services, cooperated closely to ensure system compatibility of MTST tapes from both sources. Special preprinted pin-fed forms were developed to reduce keyboarding time and format errors. Detailed flow charts of handling procedures were developed to minimize delays at each processing step.

The Automated System

The input, system entry and search, and output steps for the automated system are diagrammed in Figure 4.

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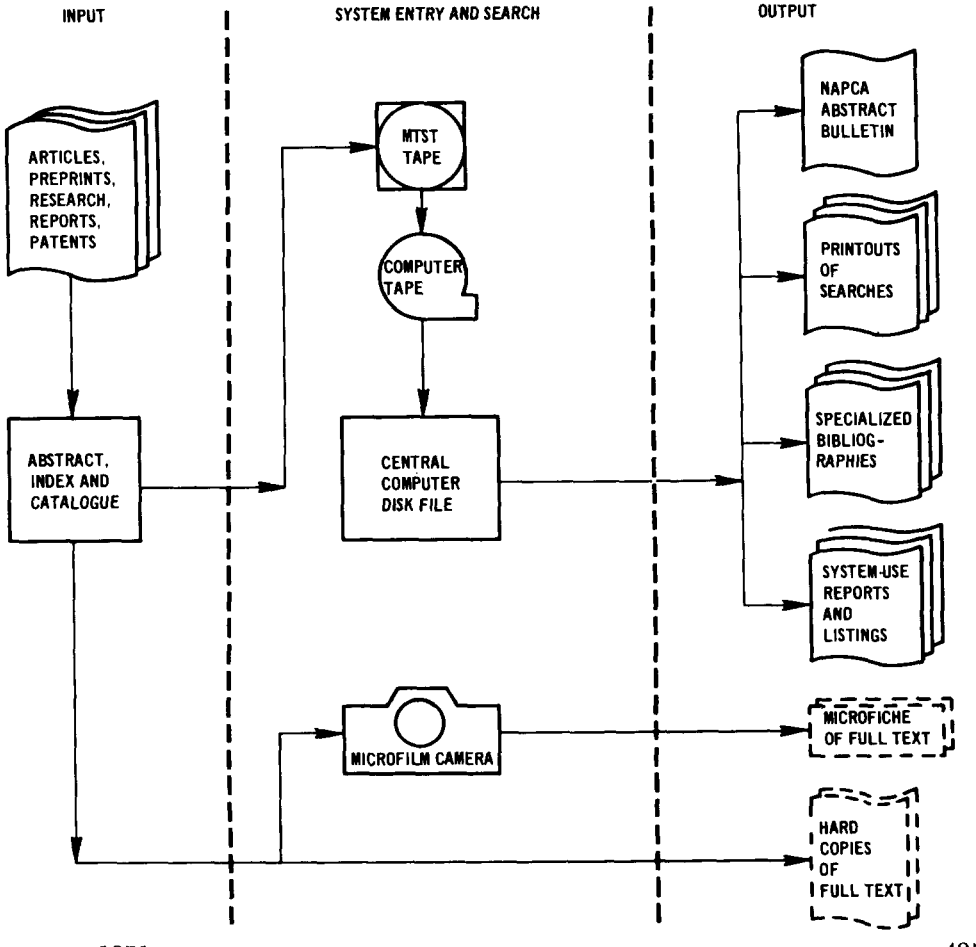
Figure 4. Simplified Flow Diagram, Automated System



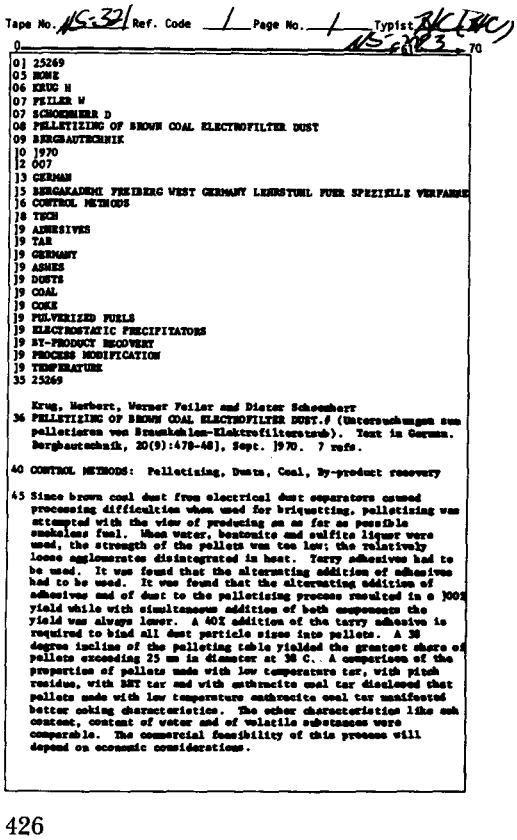
Input Preparation

The same types of documents are screened for the automated system as for the manual system, except that unpublished or prepublication information from Japan was added, through the contractor's Tokyo office. A similar extension is contemplated for European documents.

For the automated system, the information previously contained on the abstract cards, input records, and indexing sheets was combined and formatted into several searchable fields, as shown in Figure 5. For economy, the CFS program and some associated FDA subprograms were adopted without change, which created several keyboarding restrictions which might otherwise have been avoided.

• •

Figure 5. Sample MTST Input Form



Tape No. 15-321 Ref. Code 1 Page No. 1 Typist BC (BMC)
15-783

0 ... 70

0] 25269
05 HOWE
06 KRUG H
07 FEILER W
07 SCHOENHERR D
08 PELLETIZING OF BROWN COAL ELECTROFILTER DUST
09 BERGBAUTECHNIK
10 1970
12 007
13 GERMAN
15 BERGAKADEMI FREIBERG WEST GERMANY LEHRSTUHL FUER SPEZIELLE VERFAHRE
16 CONTROL METHODS
18 TECH
19 ADHESIVES
19 TAR
19 GERMANY
19 ASHES
19 DUSTS
19 COAL
19 COKE
19 PULVERIZED FUELS
19 ELECTROSTATIC PRECIPITATORS
19 BY-PRODUCT RECOVERY
19 PROCESS MODIFICATION
19 TEMPERATURE
35 25269

Krug, Herbert, Werner Feiler and Dieter Schoenherr
36 PELLETIZING OF BROWN COAL ELECTROFILTER DUST.# (Untersuchungen zum
pelletieren von Braunkohlen-Elektrofilterstaub). Text in German.
Bergbautechnik, 20(9):478-48], Sept. 1970. 7 refs.

40 CONTROL METHODS: Pelletizing, Dusts, Coal, By-product recovery

45 Since brown coal dust from electrical dust separators caused
processing difficulties when used for briquetting, pelletizing was
attempted with the view of producing as far as possible
smokeless fuel. When water, bentonite and sulfite liquor were
used, the strength of the pellets was too low; the relatively
loose agglomerates disintegrated in heat. Tarry adhesives had to
be used. It was found that the alternating addition of adhesives
had to be used. It was found that the alternating addition of
adhesives and of dust to the pelletizing process resulted in a 100%
yield while with simultaneous addition of both components the
yield was always lower. A 40% addition of the tarry adhesive is
required to bind all dust particle sizes into pellets. A 30
degree incline of the pelleting table yielded the greatest share of
pellets exceeding 25 mm in diameter at 30 C. A comparison of the
properties of pellets made with low temperature tar, with pitch
residue, with BHT tar and with anthracite coal tar disclosed that
pellets made with low temperature anthracite coal tar manifested
better coking characteristics. The other characteristics like ash
content, content of water and of volatile substances were
comparable. The commercial feasibility of this process will
depend on economic considerations.

With the revised indexing sheets, the analyst draws a line through each descriptor with a transparent felt-tip marker. Because the computer program automatically "posts up" a hierarchy, the analyst only indexes the most specific descriptor in each applicable hierarchy. Thus, instead of indexing all of the following:

Administrative and Social
Administration
Plans and Programs
Air Quality Measurement Programs
Survey Methods

the analyst indexes only "**Survey Methods.**" This technique reduces indexing time without sacrificing the average of 30 in-depth terms per document. Open-end descriptor cards are prepared as for the manual system. Asterisked terms are now used only for demand searches, but they are also used in preparing the automatically generated subject index for each issue of the abstract bulletin.

As of June 1971, the automated system contained approximately 30,000 documents, and is growing at a rate of 800 to 1,000 documents per month.

Entry into System and Search Procedure

As shown in Figure 4, the system-entry steps for analyzed documents are: 1) keyboarding on MT/ST; 2) converting MT/ST tapes to nine track computer tape (using a Digi-Data System 30); and, following a cycle of computer edits and corrections, 3) entry onto permanent disk storage. As before, full text hard copies are retained, but microfilm and microfiche also are stored.

Output

One of the most important outputs of the automated system is a monthly abstract bulletin. The computer tape containing processed document records is formatted for use with the Government Printing Office's Linatron photo-composition device, which produces page negatives in three-column justified-margin

format. Inputs for the bulletin are computer-sorted by category and indexes to each issue are prepared automatically. Cumulative subject and author indexes are provided twice a year, and publishers' address lists are provided yearly.

The advantage to both APTIC and its users in converting to computer-based operation was dramatically shown by the power and practicality of automated searches. The strategy now may include the logical OR, and the number of logical NOT's is unlimited. A printout showing the number of documents indexed under each dictionary descriptor helps the analyst phrasing the search strategy (Figure 6) estimate the number of documents the search will yield so that he can expand or narrow the strategy if necessary. Search printouts list the requestor, strategy, number of pertinent documents found, accession numbers, full citation, major category and asterisked terms, and abstracts of all pertinent documents. As with the manual system, full text hard copies are provided on request, depending on the requestor and on copyright restrictions; as an option to hard copy, microfiche are available to users under the same restrictions.

The automated system also produces specialized bibliographies in camera-ready form; such bibliographies were infrequently prepared with the manual system since they required manual searching and collating.

The automated report-generation capability of the computerized system has greatly facilitated the use and management of the system. Periodic listings of accessions are printed out by personal author, corporate author, and journal title; these are useful both as reference tools for standardization, and for demand searches. A printout of citations of all documents in the system is used to identify document requests which are incorrect or to provide missing citation information. Additional listings are also possible. Frequency-of-use listings of descriptors are generated periodically to guide dictionary revision.

New user services under consideration include installation of remote terminals within key OAP branches to provide a remote on-line search capability; and provision to key OAP users of a complete COM-produced set of microfiche for citations and abstracts of all documents accessioned, in accession-number order. When such users would request searches, they would be given accession numbers only since they would have immediate access to the abstracts from their own microfiche file. Alternatively, COM-produced fiche of citations and abstracts would be distributed on an SDI basis according to the specific interests of each user. Microfiche of citations and abstracts of new accessions will then be selectively distributed to those users.

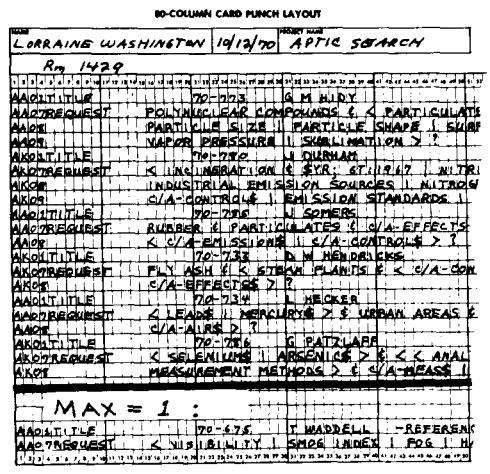


Figure 6. Sample Search Strategy Coding Sheet

Users

Since the conversion to computer base (between December 1969 and June 1971), total system users have increased to 8,200 recipients of the abstract bulletin; and to 2,400 requestors of searches. Of the search requestors, 50% were government and 50% were non-government; and of the government requestors, 90% were OAP members.

Time Lags and Number of Searches

With the computerized system, the average time lag between receipt of the document for screening and entry into the system is approximately four weeks, with an additional two weeks lag to publication in the abstract bulletin.

The average time to perform searches was reduced to three to six days from receipt of request to mailing of computer printout; efforts are being made to reduce this time further to a maximum of three days. An average of 125 searches per month has been performed since the system was converted, an increase of 150% over the number conducted with the manual system.

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Mr. Renner *and* Mr. Halpin *are employed in the Office of Technical Information and Publications, Office of Air Programs, Research Triangle Park, N.C.* Mr. Epstein *is employed in the Science Information Services Department, The Franklin Institute Research Laboratories, Philadelphia, Pa.* *The paper was presented as a contributed paper at the third General Session on Jun 7, 1971, during SLA's 62nd Annual Conference in San Francisco.*

Trends in Library Technology

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■ By examining developments and trends in various technologies relevant to library usage, it is hoped that the descriptions will provide new insights and new perspectives into the future of library technology.

MUCH has been said and even more has been written about the use of computers in libraries. Computers have been applied to almost every standard library housekeeping function, such as serial records control, acquisitions, circulation control, book catalog production, technical processing, etc. They have served as catalysts in encouraging far reaching programs such as MARC at the Library of Congress. Over the next few years MARC will gradually develop into a bibliographic data bank of immense proportions. Production of similar magnetic tapes by bibliographic centers in other countries will provide a critical mass of world-wide bibliographical data, the implications of which are so new that we hardly know how to study their ultimate effect on information dissemination practices among libraries. The MARC communications format has become an international standard. The British National Bibliography is recording its cataloging data in this tape format, and other countries are following their lead. The Italian National Bibliography will reportedly henceforth be recorded this way as part of a project called ANNA (*A*utomazione *n*ella *Na*zionale di Firenze); and at the National Diet Library in Japan the J-MARC (Japan MARC) program is beginning. In time, magnetic tapes will probably be exchanged among all national libraries, first no doubt by Boeing 747 and later by satellite communications.

The ability to use standard communication channels such as telephone lines for the exchange of computer data means that libraries can go "on-line" with a computer rather than having one on the premises. Both the Los Angeles and Bethesda, Md. offices of my company, for example, are subscribers to the General Electric Time-Sharing Network; and both offices can call up the GE computer, in Ohio, and interact with it via a terminal, using a very simple conversational computer language. We use the computer this way to simulate library operations, such as book ordering and personnel management for clients, and also to prepare our internal payroll and accounting reports; but the same procedure could be used by libraries if, for example, they wanted to telephone LC for the latest MARC records on a particular subject or communicate with a book jobber's computer to order books by standard book number.

Computer Technology

What will the marriage of computers to communications mean to libraries in the long run? There is no easy answer to this question. It is still too new and there is no hard information on which to form judgments. However, this advance in technology provides a larger

leap forward in interlibrary communications than anything before, and thus it is certain to accelerate the development of resource sharing programs among libraries and speed the interconnection of data banks, reference centers, and information networks.

Within recent years considerable advances have been made in the manufacture of small computers—mini-computers—which may be programmed to perform a limited number of specified functions. These machines are far less expensive than their large scale, general purpose antecedents, yet they possess the power to execute medium scale library routines on an almost tailor-made basis. Library interest in the mini-computer is just beginning to emerge; however, it heralds an important trend because of the implied reduction in the cost of computer operations in libraries.

Telecommunications Technology

A second relevant technology of importance is telecommunications and, in particular, the Touch-Tone telephone, especially because of its new capabilities in the areas of educational communications and information transfer.

In many ways the Touch-Tone telephone is similar to the familiar dial telephone—both rely on audio input and output. However, there is a major difference—only the Touch-Tone telephone enables a user to transmit analog information to a digital computer.

It does this by emitting different frequencies of sound for each number represented by the twelve pushbuttons on its keyboard. When a Touch-Tone telephone is used to call a distant machine —a computer, teletype machine, or keypunch machine—it is able to transmit numerical information *after* the telephone connection is established. And, when this numerical or digitized information is received by the distant machine, it can cause it to function by remote control. Originally there were only ten pushbuttons on a Touch-Tone keyboard; but in 1968 the Bell System assigned two more buttons—an asterisk (*) and a pound sign (#). These two new buttons are codes to increase a user's remote control of the switched telephone network and also a computer. For example, the pound sign is a standard signal which can activate a series of different programmed computer functions—START, STOP, SKIP, ADD, etc.—and the asterisk can serve as a separator to distinguish between different elements or fields of a data record such as author, title, collation, etc. This means that the two signs, plus the ten digits, allow the Touch-Tone telephone to manipulate data automatically in a distant machine in a number of different ways. It has been designed so that it will eventually accommodate up to sixteen pushbuttons in order to permit transmission of the letters of the alphabet, as well as numbers and punctuation, and to feature additional remote controls.

Many advantages accrue when a Touch-Tone telephone is used as an input/output terminal in an information system. Its greatest advantage, however, exists in its dual usage—it can function as an ordinary telephone and as a data terminal. This dual usage is important because the cost of the Touch-Tone telephone can thus be shared by both functions. If in the accounting all costs are deferred for its primary use as a telephone, then it essentially becomes a free input/output terminal. Other advantages include: immediate availability, quick and easy installation and replacement, free Bell System maintenance, quiet operation, no additional power requirements, and no supplies to keep it functioning. Its two disadvantages at present are the inability to produce a printed record of what is sent over the Touch-Tone keyboard and the availability of a limited character set.

The Touch-Tone telephone now comes optionally equipped with a new card reader. The dialer cards are plastic of a certain thickness and approximately credit card size, and each card can be pre-punched with up to fourteen digits of information. Several companies are in the business of converting old credit cards into new dialer cards which are

not only embossed, but are also punched for use in a Touch-Tone telephone. Although the cards were originally intended to be used for frequently called telephone numbers, they are also being used to code frequently used instructions pertaining to computer and other machine operations. For example, researchers assigned to Project THEMIS at the University of Houston actually use Touch-Tone telephones connected to a computer to write and debug programs. And, some blind people have learned to write computer programs by making use of the Touch-Tone telephone and a voice answer back computer.

The Touch-Tone telephone is also the forerunner of the Picture-Phone now in operational use between certain large U.S. cities. The Picture-Phone possesses all of the characteristics of the Touch-Tone, but in addition it can provide a television picture of the person called, of printed data, or a display of selected output *from* a computer. Together they represent a powerful information team. The Touch-Tone terminal remotely controls the selection of information, while the Picture-Phone displays the information for individual use. Companies such as RCA and Westinghouse have demonstrated allied communications technology which can be used to find and activate a single home television set for the display of requested information. This is equivalent to telephoning a TV set.

During the next few years, the various communication carriers in the U.S. will be upgrading their inter-city lines in order to increase their network capacity to carry computer and picture data, as well as voice. CATV (Community Antenna Television) systems are rapidly finding their way into American homes, and recently the Federal Communication Commission handed down a ruling which authorizes private companies to compete with AT&T in the development of nationwide data transmission networks. As this occurs, wider use will undoubtedly be made in libraries of devices such as the Touch-Tone and Picture-Phones. Use of the telephone as an information retrieval terminal is already evident with dial telephones. For example, if you are a general practitioner living in the State of Missouri, you can telephone a certain number that will gain you access to 1,000 pre-recorded 5 to 6 minute messages on various specialized medical practices and procedures. Eventually Touch-Tone telephones with remote controls will enable the caller to interrupt a message, repeat or replay a portion of the message, or activate a juke box type of mechanical device to pick and play one or more audio cassettes of the caller's choice. Should data banks of audio information on many different subjects be kept by libraries, each person with a Touch-Tone telephone would have his own library terminal. This challenges our ingenuity to find new user services that will motivate the caller to utilize the full range of library resources in support of his information needs—not only audio information, but also printed materials, the newer media, computer controlled data banks, etc. The Touch-Tone telephone development is, therefore, particularly important to the profession because it is a user-oriented development.

Some libraries are also investigating the use of Touch-Tone telephone systems for circulation control. By using a mini-computer, a voice answer back unit, and machine readable book and borrower cards, it is practical to enter transactions into a computer by telephone and, on demand, receive a voice response about the loan or reserve status of a given book.

Touch-Tone and other developments in telecommunications technology are certain to prompt librarians and information scientists to re-evaluate user services. The Touch-Tone terminal is the one device which can place all information users "on-line" with the library.

Micrographics Technology

In the past ten years the field of micrographics has advanced very rapidly. Today, images of the printed page can

be made at very high reduction ratios. "Ultrafiche" are images which are reduced at ratios above 100:1; "superfiche" employ reduction ratios under that number. Today, holographic and laser recording techniques can write a line on film one or two microns wide; one micron is equal to .000039 inches. This is so tiny that a very high powered microscope is required to even see the intelligence.

Micrographics technology has reached the limits of photoreduction and, therefore, emphasis in the future is likely to be on the use of microfilm as supporting information systems rather than as compact storage media. Within the past year, for example, a number of companies announced special microfilm information systems geared to suporting reference and technical processing functions in libraries. Encyclopaedia Britannica and the National Cash Register Company both advertised the availability of new microbook collections; and Nicholas Spence, the Public Printer, indicated his intent to publish U.S. Government documents in microfiche form.

Many commercial organizations and professional societies offer microfilm equivalents of their printed indices and data banks. *Chemical Abstracts* is a good example. The development of COM (Computer Output to Microfilm) machines has made this service possible. COM machines are special purpose devices which project computer output directly onto unexposed film according to pre-programmed instructions. Thus, for example, one company now uses MARC tapes to produce updated microfilm images of LC catalog cards. It then sells this film to library technical processing departments. The trend toward information systems on microfilm for reference and technical processing purposes can only continue to expand. Today, the speed at which computers can logically cumulate information and generate microfilm is much faster than the time it normally takes for conventional printing, and that is what makes the difference. As long as this advantage persists, the application of micrographics technology to reference and technical processing functions will steadily increase. Whereas microfilm was at one time thought of only as a space saver in libraries, its primary use in the future is more likely to be as an integral component of some information support system.

As microfiche collections in libraries grow larger, the means for making copies of a fiche as easily as we can copy the printed page will emerge. Thus, we can expect to see fiche-to-fiche duplicating machines and portable microfiche readers as popular in the libraries of tomorrow as the Xerox copy machine is today.

Audio-Visual Technology

Advances in audio-visual technology are happening so quickly that it is difficult to keep abreast of them. Leading the list of new developments is the color video cassette. This new technology makes it possible to record television for individual use. Until now, television has been part of mass media communication reaching thousands of home sets at once through scheduled broadcasting. The video cassette, however, permits segments of television to be recorded at very high density and duplicated in quantity so that TV-replays are available at one's own convenience. A number of companies, such as RCA, AMPEX, CBS, Motorola, Telefunken, and SONY, are keenly aware of the potential implications of this development for the recreation and educational markets; consequently, they have been competing to introduce the first workable system.

SONY has a public exhibit hall in its building on the Ginza in Tokyo where it demonstrates its video cassette system and associated equipment. A number of devices comprise the system. First, there is the cassette itself. It is the size of a standard book, approximately 7″ × 9″ and 1″ wide. Inside, there is a ¾″ magnetic tape which records up to 60 minutes of color television. Because the tape is magnetic, it is erasable and reusable. The spool of tape is enclosed in a

tamper-proof container which incorporates mechanical features for automatic threading. The tape records TV images and two parallel sound tracks which can be used either for stereo music recordings or for dual language recordings.

To use the video cassette requires playing equipment. The SONY player is about the size of a standard hi-fi amplifier. A flick of the finger loads the video cassette into the player. Four controls, similar to those on an automatic microfilm machine, are available: *start, stop, fast forward,* and *rewind.* There is also a switch for each or both sound tracks. These give the user great flexibility for individual viewing and listening. The viewing machine itself can be any standard television set, not just those manufactured by SONY. A wire connects the player to the set at its antenna terminals or through a special plug. No elaborate or costly intermediate machine is required.

The video cassette of today will undoubtedly be the audio-visual book of tomorrow. In fact, SONY very wisely decided to place its video cassette in a plastic box that looks like a book and can be processed and shelved like a book.

A particularly intriguing item was the new machine which SONY exhibited for the production of video cassettes. At the front end there is a "mixer" which accepts various audio-visual formats—2″ × 2″ slides, ¼″ audio tapes, audio cassettes, video tapes, film strips, and sound movies—and transfers them one at a time or in combination to a master video tape which in turn can produce hundreds of video cassettes simultaneously. This is an extremely important development because it provides a way to transfer the multiplicity of extant or new audio-visual materials to a single format for individual use. The video cassette serves as this common denominator.

Mr. Morita, President of SONY, encouraged me to make a video cassette to test the programming capabilities of the "mixer." The cassette I made contained a ten minute segment of live video in which I explained the SONY system in front of a slide backdrop of Mt. Fuji and to the accompaniment of traditional Samisen music, a 20 minute segment featuring a set of thirty 2″ × 2″ slides and ¼″ sound tape on which I had prerecorded my consulting report, and a five minute segment of 16mm color film with English and Japanese sound tracks. The conversion process through the mixer worked smoothly. A SONY player connected to a regular GE television set displayed the results. Duplicates of the video cassette remained in Tokyo for local viewing and another was sent to Bangkok for special viewing there.

It will probably take several years to introduce the color video cassette into the mainstream of educational audio-visual materials. But, it does have major implications for libraries.

Conclusion

No discussion of technology can be complete without mentioning something about the effects of technology on the printed book and the printed word. To do so, I quote from a recent book by Ben H. Bagdikian called *The Information Machines: Their Impact on Men and the Media.* Unlike many authors, Bagdikian does not succumb to the worship of technology; to him, a machine is an instrument and he believes that it is man that gives it its moral and social tone.

He is also especially alert to the issue of competition between the printed book and the media. "Whatever other cultural change this generation has seen, and whatever the growth of electronic media, the ability to read and the power to reason abstractly has never been higher." He goes on to challenge Marshall McLuhan by commenting, "Print is neither dead nor dying. It is being forced to make a place in the family of communication for a new way of transferring information and emotion. . . . The new medium is disrupting and even revolutionary, but it leaves the alphabet and the document still indispensable to the efficient use of the eye and brain and

to the demands for human rationality."

For a century or more, American librarians have been diligently devising ways and means to make man's thoughts and deeds available to posterity. Today, man's inventiveness has given us new instruments for extending and distributing the flow of knowledge. Somehow in the next decade we must find a way to incorporate these new technologies sensibly into the mainstream of our activities.

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Mr. Becker *is president of Becker and Hayes, Inc., Bethesda, Md., and a member of the newly appointed National Commission on Libraries and Information Science. His paper was presented at the Fifth General Session on Jun 9, 1971, during SLA's 62nd Annual Conference in San Francisco.*

An AV Workshop Approach to Teaching the Use of *CA* Indexes

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■ An AV workshop was developed by special and academic librarians to train students, users and staff in systematic approaches to using *CA* indexes. The system is applicable to teaching the use of other specialized searching tools.

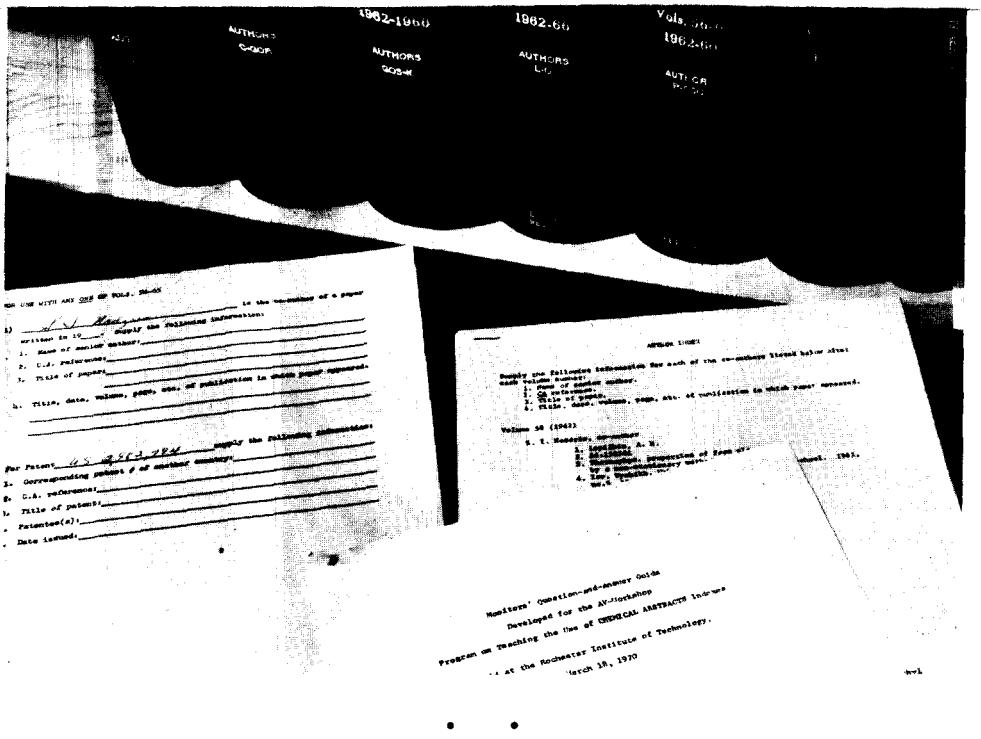
The AV presentation is a slide-tape modification of three units on the use of *Chemical Abstracts* selected from the "Audio Visual Instructional Systems" developed by O. Bertrand Ramsay of Eastern Michigan University. The use of problem sheets color coded to the various types of indexes and the monitors' pre-searched answer guides allows the participants to work at their own pace, to check answers immediately and to receive explanations easily and quickly while working on a problem.

IN RECENT YEARS it has become obvious that librarians, especially academic and special librarians, have a responsibility to the community they serve that extends beyond acquiring, organizing, and displaying, in some user-oriented form, the materials that contain needed information *(1)*. It is also our responsibility to develop means of acquainting the information user with systematic approaches that will obtain his required information in the shortest time, with a high probability of retrieving a maximum of the information available.

To meet this responsibility, we developed an AV workshop approach to teaching the use of *Chemical Abstracts* indexes. The program was originally designed to train practicing librarians and was limited to the use of *CA* Indexes *(2)*. The same approach has been effectively used with fifth-year chemistry students at the Rochester Institute of Technology, and by modification of the problems, this technique has possibilities for training library school students, laboratory technicians, clerical staff in a science library, and other information users. Furthermore, the basic format is applicable to teaching the use of other searching tools.

Slide-Tape Presentation

The traditional lecture followed by laboratory exercises dealing with library questions is often dull and wasteful of time and effort *(3)*. More often than not, it is necessary to repeat on an individual



basis during the practice session the same material presented in the lecture. To overcome this problem, the usual lecture is replaced with an interesting 45-minute slide-tape commentary, and the practice session is designed to place the emphasis on individual attention.

The audio-visual presentation is a slide-tape modification of three units on the use of *Chemical Abstracts* which were selected from the 28 unit Audio-Visual Instructional System *(4)* developed by Dr. O. Bertrand Ramsay of Eastern Michigan University.

Problem Solving

On completion of the slide-tape presentation, each participant is given a workbook containing directions for procedure in the library and a set of color coded forms for answering problems. The problems were designed by the authors to cover each of the seven types of *CA* Indexes.

On each page is the outline for the type of data to be searched, but not the specific questions to be answered. The color of the sheet directs the participant to any one of several *CA* volumes to be used for each type of problem. On the first pink page are two sets of forms, the first to be filled in by using the author indexes of any one of volumes 56–65. The second problem on the page is to be completed by using the Patent Indexes of the same volumes.

In the library the volumes are set up individually on tables. Beside each volume are colored sheets that match those in the workbook. On these, however, the specific questions are filled in for each volume. These pages are encased in clear plastic folders and remain on the tables. If a student selects a seat in front of volume 56, he will find on the first pink sheet the name S.I. Modzrin for question 1 and US 2,982,794 for question 2. The student then writes in this name and patent number on his first pink work sheet and proceeds to search for the information requested in the indexes and abstracts of volume 56. Since questions 3(subject) and 4(formulas) can be answered using the same volume, a second pink sheet containing appropriate forms is in the student's workbook. On the table the corresponding pink sheet has specific questions filled in for each volume.

When a student has finished his first problem he can, by spotting the different colored sheets on the tables, move on to other types of index problems.

The green sheets are to be used with volumes 66 through 69. This gives the student a choice of four problems using the Ring and Hetro-Atom-in-Context indexes.

Questions on the blue sheets involve searching the *Decennial* and *Collective Indexes* for information. Finally, the white sheets in front of the ACCESS volumes and quarterlies involve searching for such information as price, title, and location of journals.

The questions need not be answered in order. The participants may select seats at any of the tables and work out the problem for the volume in front of them. This prevents the usual pile-up of people all trying to use the same material simultaneously. It also permits as many as ten students to work on the same type of index, each with a different problem—one for each of the ten *CA* volumes. With the more difficult indexes a participant may, if he feels the need for more practice, work on several problems using the same type of index in several different volumes.

While the group works, monitors are needed to assist individuals who may need explanations about the indexes and the chemistry involved or require further discussion about search strategy. These monitors should be carefully chosen for their backgrounds and ability to communicate their expertise to beginners. Monitors with different rationale for using chemistry literature (i.e. chemistry professor, industrial researcher, science librarian, etc.) can give the participants a variety of approaches to the problems.

For ease of use, the monitor's presearched answer guide is also color coded to match the workbooks and the sheets in front of each volume. This color coded system is simply a device to correlate questions and answers with the *CA* volumes containing the various types of indexes. The system has the advantage of allowing the participants to work at their own pace, to check answers, and to receive explanations easily and quickly while working on a problem.

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This Works For Us

Color Code System of New Law Library

D. Hughes Cauffman

Francis, Cauffman, Wilkinson & Pepper, Philadelphia, Pa.

THE OLDEST law library in the United States, belonging to the Philadelphia Bar Association, became one of the most modern when it was moved into new quarters at 1321 Chestnut Street, Philadelphia. Renamed The Theodore F. Jenkins Memorial Law Library, it is a fully air-conditioned facility containing space for more than 200,000 volumes, as well as a judges' reading room, a humidity-controlled rare-book room, dictating and typing rooms, and conference rooms and study facilities. Special attention was given to graphics and particularly to the library stack identification system.

Architects Francis, Cauffman, Wilkinson & Pepper of Philadelphia had two purposes in mind when they initiated a new concept for location of subject material in the library. These were quick, easy identification and, secondarily, the introduction of color into the usually monotonous and drab appearance of the stack areas.

The architects are quick to admit that the system which was developed for the law library will not necessarily work for libraries which house collections other than the highly specialized. However, it became apparent during the design process of the law library that the collection

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Colored Plexiglas panels, engraved with the category of subject matter and the stack number, are attached to ends of stacks for identification.

could be organized into 11 divisions or categories. At the same time, it also became obvious that had the Jenkins Library not been so specialized, but rather a general library of 20 or more divisions, the color coding system would not have worked, since the gradations of color would have lacked the necessary distinction to be effective.

The color code system is quite simple. A color was selected for each category or division in the library. Colored Plexiglas panels, approximately 12 inches square, were then designed. These were engraved with the title of the subject matter and the stack number, and applied to the ends of the book stacks in accordance with a predetermined plan worked out with the director of the library, Joseph Pascucci. The visual result is bold bands of color from stack to stack, identifying the subject material immediately.

A printed hand-out is available to show the floor plans and the functional arrangement of the library and the locations of each division of subject matter on each floor. The hand-out is printed in colors identical to the colored Plexiglas panels on the ends of the stacks. And, finally, when all the books are recataloged, it is anticipated that the cards used for this purpose will also be color coded using the same 11 colors.

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Mr. Cauffman *is a partner in the architectural firm of Francis, Cauffman, Wilkinson & Pepper in Philadelphia.*

Commentary on

Evaluation of Indexing

I HAVE READ with increasing concern the series of articles (*Special Libraries,* Oct 1970-Feb 1971) on evaluation of indexing contributed by Masse Bloomfield. I believe they contain many inaccuracies, misinterpretations and superficialities. To deal with these basic misconceptions in print would take more time than I am prepared to devote to the task. I would not have bothered to write this letter, which I hope you will publish, except that parts 4 and 5 of Bloomfield's article paint such a distorted and superficial picture that it is impossible to let them pass unnoticed.

Bloomfield is certainly allowed to criticize the Cranfield studies if he wishes and presumably he has his own good reasons for doing so. However, almost all of his "criticism" consists of quotations and paraphrases from other people. The paraphrases are not particularly good, some of the quotations, when taken out of full context, give a distorted picture, and many of Bloomfield's interpretations of these quotations are entirely erroneous. Moreover, Cleverdon has already himself answered many of these previously published criticisms, a fact that Bloomfield seems to conveniently overlook.

In my case (part 4 of the article), while he has quoted me correctly, Bloomfield has unfortunately misinterpreted the quoted statement and used it unjustifiably as a criticism of Cranfield. I said that recall and precision ratios "cannot be used to compare the performance of our system with that of some other system having different documents, different requests, and different user tolerances. . . ." In other words, it would be

meaningless to study retrieval systems at NASA, AEC and DDC and evaluate them comparatively on the bases of recall and precision ratios achieved in representative searches. However, in the first Cranfield studies, documents, requests and relevance assessments were held constant and the methodology used provided a perfectly legitimate comparison of the variable investigated, namely the use of four different vocabularies in indexing.

The only original "criticism" of Cranfield presented by Bloomfield is either completely trivial or badly misguided. I quote:

"When words like 'Effects' and 'Effectiveness' appear in a list of index terms (given in the Cranfield Uniterm Index terms of Table 1) the entire experiment is suspect."

Now really! Is this to be taken seriously? Can the author really ask us to "suspect" Cranfield procedures and methodology simply because certain general terms appear in a Cranfield Uniterm list? Such criticism is both childish and irrelevant. Some of us might agree that, in many applications, a general term such as "Effectiveness" has little utility. It may be redundant but it is certainly not wrong to include it. Unfortunately Bloomfield's experience in indexing appears to be largely restricted to KWIC indexes. At least, it is in writing about KWIC indexes that he appears most comfortable and most accurate. Moreover, he seems to uphold the KWIC index as some sort of zenith of indexing quality rather than the quick and dirty (but sometimes useful) tool that it really is.

A term such as "Effectiveness" might be relatively useless in a KWIC index. However, I am by no means certain that it is useless in a post-coordinate retrieval system using a computer, peek-a-boo cards or some other device for manipulating classes. If I coordinate the descriptor "Library" with the descriptor "Effectiveness" I might expect to retrieve a certain class of documents in which I am very interested; can it be that Bloomfield fails to recognize that, while a single word may be very vague or ambiguous, the same word can be specific and precise when placed in context with other words?

Incidentally, Bloomfield might be interested to know that "Effectiveness" appears as a legitimate descriptor in the *Thesaurus of Engineering and Scientific Terms,* the *Thesaurus of FAA Descriptors,* the *Thesaurus of DDC Descriptors,* the *Bureau of Ships Thesaurus,* the *NASA Thesaurus* and possibly several others. The *NASA Thesaurus,* with which the author is presumably familiar, also includes the descriptor "Effects." This is, of course, a trivial point and hardly worth the several lines I have devoted to it. It does, however, serve to illustrate the strength of Bloomfield's critique of Cranfield.

That was his major criticism of Cranfield I. His major criticism of Cranfield II is that the experimental data base was indexed too exhaustively (overindexed). This criticism reveals his whole misunderstanding of the entire purpose of the Cranfield II studies. The document corpus was indexed fully exhaustively for the simple reason that the investigators wished to study the effect of indexing exhaustively on search performance. If we index exhaustively initially we can obviously vary the exhaustivity level at a later time and therefore measure the influence of this factor on retrieval. This is precisely what was done at Cranfield. Moreover, the fully exhaustive Uniterm indexing of Cranfield II was an absolute necessity as a base point from which various more sophisticated index languages were developed. Beginning with this "maximum size" vocabulary it was then possible to group the terms together into classes of various types, thereby reducing the size of the vocabulary, and allowing a comparative evaluation of the effects of these various vocabularies on the retrieval process. Bloomfield unfortunately persists in confusing experimental systems with operating systems.

Moreover, he seems to regard all "terms" as equivalent:

"Why is it necessary for Cleverdon to assign over 30 index terms per document and Chemical Abstracts *only 6?"*

I suppose he never stopped to consider the possible equivalency of these two approaches? Doesn't he recognize that *CA* uses a highly precoordinate vocabulary of entry word plus modifying phrase (an articulated subject index) and that six entries in such an index might well be reduced to as many as thirty Uniterms?

"Fifty terms are extraordinary for any index." This statement is nonsense, especially in the light of the present strong move toward the implementation of natural language searching systems. If you are storing the entire text of a message, or even an abstract of a document, fifty terms would certainly not be extraordinary.

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The Author Replies

I am still convinced that indexing can be compared objectively. My series of articles was an effort to find objective characteristics of indexes. In order to compare indexes, I believe that it is necessary first to determine the basic characteristics of indexes. In my series of articles, indexes were compared statistically for one characteristic of indexing, the breadth of vocabulary. However, that data does not determine how well any single index term affects the quality of an index. Mr. Lancaster repeats in his letter that the Cranfield Method cannot be used to compare NASA, AEC and DDC retrieval systems.

When I expressed concern about the terms "Effects" and "Effectiveness" appearing in a list of Cranfield I Uniterms, I was expressing a subjective feeling. The list of stop words from the KWIC *Chemical Titles* which I had used does indeed prevent the use of both these terms. I am suspicious of indexers that would use these words in any index. I must agree with Mr. Lancaster that these two words gain respectibility when they appear in thesauri and are used in printed indexing and abstracting journals. This does not lessen my suspicions about the use of these two words in an index.

The KWIC index does have a quality which human indexers cannot provide. Once the computer program has been determined for a KWIC system, there is a consistency to the index that no human can match. I was using that consistency as a base which I knew would not change. The same document titles can be run through the computer over and over again and if the computer is operating correctly, the index will be prepared identically for as many times as the titles are processed. This is a quality not available in human indexing. This quality does not make the KWIC index easy to search, just easy to prepare with machine consistency.

Mr. Lancaster is quite correct when he states that I assume all indexing terms are equivalent. One of the purposes of my study was to find some basis of validating that assumption. I know subjectively that the term "Effects" just does not have the same kind of value as a term such as "Infrared Rays." There are plenty of papers written about infrared rays, but I doubt if anyone could find a paper written about "Effects." The word "Effects" has to be coordinated with another term to produce meaningful terms such as "Radiation effects." And here Mr. Lancaster and I do agree. If we are talking about post-coordinate systems, the term "Effects" makes sense. I consider every term as if it were a precoordinated term where the title would appear with the term making every term quite respectable and would give the user a better grasp of the document represented by the index term.

However, I would suggest that Mr. Lancaster is loose with his definition of equal terms. In his book, *Information Retrieval Systems,* on pages 166, 167 and 168, he discusses the effect of exhaustivity versus recall. He has plotted a curve which starts with five terms and increases to fifty terms. He does not qualify the value of his terms. In other words, each term is equal to any other term according to the way he describes the experiment. He states:

"We can, for example, take a subset of requests and related documents (known relevant and known not relevant) from our test corpus and have the documents re-indexed at varying levels of exhaustivity. When we compare this re-indexing with the search formulations prepared for the various test requests, we can arrive at some recall and precision approximations for each exhaustivity level. These results, when plotted as a curve as in Figure 42, indicate that, if we are quite satisfied with achieving 75 to 80% recall and never need to approach 100%, the level of 10 terms per document may be regarded as an optimum level of exhaustivity to employ in this particular situation, since it should represent a significant economy over indexing at the 20-term average.

If we want to simplify matters slightly and plot only recall against exhaustivity of indexing, the result may be a curve similar to that of Figure 43. Here we can see strong evi-

dence of diminishing returns. Indexing at an average level of five terms per document allows us to achieve approximately 50% recall, while the increase to 10 terms per document raises recall to 75 to 80%. After that there is very pronounced leveling off. We must increase the indexing level from 10 terms to around 40 to 50 in order to achieve a 90% recall. Again unless extremely high recall is crucial, this level of 10 terms per document would seem to be an optimum one to employ. In many situations, the greatly increased costs of indexing at the higher levels of exhaustivity will not be justified.

In reading this explanation about the effect of exhaustivity versus recall, Mr. Lancaster tells me that the fiftieth term is equal to the first, even though we both know that the fiftieth term will do little to increase recall. There is no qualification in this passage saying that indexers must be acutely aware that terms are not equivalent and care should be taken about using unequal terms. Implied in the passage above is that all the terms are good and useful up to and including the fiftieth term.

The data from the above discussion brought to mind a point about the relationship between exhaustivity and recall. The graph given by Mr. Lancaster in his book shows the following approximate figures:

Words per Document	*5*	*10*	*20*	*30*	*40*	*50*
Recall in percent	*52*	*72*	*80*	*86*	*90*	*92*

Going back to Cranfield I, the Uniterm system with an exhaustivity of about 11 terms had a recall of 82%. The Alphabetical system with an exhaustivity of three to four terms had a recall of 81.5%. Using Cranfield I data, exhaustivity has no effect on recall. Mr. Lancaster has said there is a relationship between exhaustivity and recall. I find these data to be confused, if we compare values from two systems.

Mr. Lancaster, in his very well written book, does not define inequalities of index terms that I could find. When he talks about index terms in his book, he does not discuss equal or unequal terms. That is one of the questions in my series of articles. My opening statement is:

This series of articles has been written with the purpose of finding some rational basis for the evaluation of indexing. By the evaluation of indexing, it is meant that some rule or generalization can be developed so that an individual index term can be judged as either an excellent term or a poor term.

I cannot see that Mr. Lancaster has shed any light on this problem. If he keeps insisting that "Effects" is as good a term as any other term and then says that I am confused by calling all terms equivalent, I feel that he has fallen into a trap of his own making.

I believe that the basis of Mr. Lancaster's entire argument involves the problem of types of indexing. I can quote from the last paper in my series where I say:

The second conclusion that has appeared in the course of this study concerns kinds of indexing. Two kinds of indexing and two kinds of searching have been developed by experimenters in trying to analyze indexing. . . . The searching strategy for human searches is far different from that for machine searches. This is an important difference in indexing and these two kinds of indexing are confused in the literature. An attempt must be made to distinguish these two approaches to indexing.

In writing my series of papers, I looked at indexing from the position of an indexer or cataloger. Mr. Lancaster looks at indexing from the point of view of a literature searcher. The argument we have probably stems from having two different minds concerning the same problem. It would seem to me that we should be able to find some common ground.

I think that both of us do believe that the ultimate test of an index has to be absolute recall. It is a source of frustration that the Cranfield Method cannot use recall values to compare indexes. I have tried to find a way out of that frustration by trying to determine the characteristics of indexes, and then to compare these characteristics for an elementary evaluation.

We need to expend a good deal more effort to understand the indexing process. The problem of comparing and evaluating indexing systems still persists. I haven't found the answer to the evaluation of indexing and regretfully neither has Mr. Lancaster.

Masse Bloomfield
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sla news

New York Chapter Seminar

On Apr 23, 1971, the New York Chapter of Special Libraries Association sponsored a Seminar on Library Planning entitled "Blueprint for the '70's." Held at the Biltmore Hotel, in New York City, the Seminar provided an informative and stimulating forum for the exchange of ideas on many facets of the planning and remodeling of special libraries. The attendance of 195 people at the all-day meeting included librarians from six states.

The Committee that was formed to organize the Seminar and to coordinate the activities was composed of: Ellis Mount, Chairman; James B. Poteat, Program Chairman; Mrs. Bettie Jane Third, Local Arrangements Chairman and Treasurer; Nancy J. Bowles, Publicity Chairman, and George Ginader, Displays Chairman. Jean Deuss represented Mrs. Vivian Hewitt, New York Chapter president, and the Chapter board on the Committee.

During the morning portion of the Seminar, speakers presented their views on particular aspects of the central theme. Dr. Ellsworth Mason, Hofstra University, Hempstead, L.I., gave the keynote speech, "The Shaping of Special Libraries; or the Joys of Procrustes' Bed," in which he discussed the problems which poorly designed libraries present to their users. The other speakers and their topics were: Robert G. Krupp, Science and Technology Division, New York Public Library—"Pre-planning Techniques"; Gordon E. Randall, IBM Research Library, Yorktown Heights—"Workflow and Layout"; Mrs. Mary Nikas, Interiors for Business, Inc., Atlanta, Ga.—"Interior Design"; Mrs. Elizabeth J. Gibson, Merrill Lynch, Pierce, Fenner & Smith, New York—"Basic Equipment"; Andrew V. Ippolito, Newsday, Inc., Garden City—"Special Equipment"; Mrs. Bette Snyder, Oppenheimer & Company, New York—"Planning Team: Librarian, Management, Consultant, and Architect"; Mrs. Margaret N. Sloane, Consultant, New York—"Remodeling vs. Planning a Library, Moving a Library."

After lunch, several concurrent panel discussions were conducted to enable Seminar participants and panelists to probe more deeply into individual library requirements.

A display area included layouts of special libraries in the New York area, as well as literature from manufacturers of library equipment and supplies. A specially-prepared bibliography and checklist on library planning were distributed. The bibliography was prepared by Mrs. Janice Kreider and the co-authors of the checklist were Mrs. Jeanette S. Rockwell and Jean E. Flegal.

As a result of the success of the Seminar and the enthusiastic comments of the participants, the New York Chapter is considering the possibility of conducting another seminar within the next two or three years.

Plans for publication of the proceedings are under way.

Nancy J. Bowles
Dillon, Read & Co. Inc.
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MEMBERS IN THE NEWS

Forrest Alter, Flint Public Library, was named "Librarian of the Year" by the Flint Area Library Association.

Gertrude L. Annan (New York Academy of Medicine), **Isabelle T. Anderson** (St. Joseph's Hospital Medical Library, Phoenix, Ariz.) and **Wilma Troxel** (University of Illinois Medical Center, Chicago) received honorary membership in the Medical Library Association in recognition of their contributions to its work, upon their retirement.

Mrs. Doris P. Baster . . . from deputy librarian and head of library services to librarian, Naval Research Laboratory.

Mrs. Charlotte Beatty . . . appointed to the Washington State Advisory Council on Libraries to represent special libraries.

Dr. Olga B. Bishop, professor of library science, University of Toronto, received an honorary LL.D. degree from Mount Allison University, Sackville, N.B.

Dr. Robert E. Booth, chairman of the department of library science education at Wayne State University . . . appointed to HEW's advisory committee on library research and training projects.

Dr. Estelle Brodman, director, Washington University School of Medicine Library, St. Louis, was selected by Medical Library Association to deliver the Janet Doe Lecture on some aspect of the philosophy of librarianship. She was also given the Marcia C. Noyes Award for her distinguished contributions to the profession.

Mrs. Dorothy Fayne, District Director of Libraries, Third Naval District, was awarded the Achievement Citation of the Armed Forces Librarians Section of the Public Library Association of ALA.

Laurence M. Feldman, librarian of the Yale University Engineering and Applied Science Library, has accepted a position as director, The Physical Sciences Library Complex, University of Massachusetts, Amherst.

Mrs. Jane Fulcher, librarian, Medical Library, Washington Hospital Center, Washington, D.C., received the MLA Eliot Prize for her *Medical Librarian Examination Review Book,* v.1.

Lillian Hamrick, librarian, U.S. Department of Labor, and **Dr. Russell Shank,** Director of Libraries, Smithsonian Institution, have been appointed to the Federal Library Committee Executive Advisory Committee.

Eugene B. Jackson . . . appointed professor of library science, University of Texas at Austin, Graduate School of Library Science.

Mrs. Pauline Whitlock Jennings . . . retired as senior technical specialist in the National Agricultural Library.

Emily Keeley, chief librarian, Department of Fisheries and Forestry, Ottawa . . . appointed Canadian representative to a committee formed to implement an abstracting service in worldwide forestry research information.

Loretta J. Kiersky was cited in *Information and Records Management* (April 1971) as "one of the best-known and respected women in the information field." She is supervisor of the Information Center, Air Reduction Co., Murray Hill, N.J.

Mrs. Adele A. Lerner . . . appointed Junior MEDLARS Searcher with the New York and Northern New Jersey Regional Medical Library of the New York Academy of Medicine.

Mrs. Selma B. Lokitz . . . elected a member of the International Platform Association.

William C. Lowe, formerly head, Technical Information Center, D. H. Hill Library, North Carolina State University, Raleigh . . . promoted to assistant director for Reference Services.

Mary Jo Lynch, from senior reference librarian, University of Massachusetts . . . to assistant professor, School of Library Science, University of Michigan, Ann Arbor.

Jess A. Martin, formerly director of the Health Sciences Center Library, Temple University, Philadelphia . . . appointed director of libraries at the University of Tennessee Medical Units in Memphis.

Cornelius J. McKown . . . appointed assistant librarian, Agricultural and Biological Sciences Library, Pennsylvania State University, University Park.

R. Kathleen Molz . . . appointed chief, Planning and Evaluation staff, Office of Education's Bureau of Libraries and Educational Technology.

Rev. Auguste-M. Morisset, O.M.I., director of the Library School, University of Ottawa, since its foundation in 1938 . . . has retired.

Dr. Perry D. Morrison . . . from acting dean to dean, University of Oregon School of Librarianship.

Mrs. Carol A. Nemeyer . . . appointed senior associate for Education and Library Services, Association of American Publishers.

John J. Nicolaus, librarian, Naval Ship Systems Command . . . is retiring.

Valerie Noble is author of *Desk Top Library,* an SDI pilot project of Upjohn's Business Library, Kalamazoo, Michigan. Copies are available for $1.00 postpaid from Miss Noble.

Florine Oltman succeeds **Elizabeth Miller** who retired as Chief of Reference, Air University Library, Maxwell Air Force Base, Alabama. **Mrs. Mary Louise Pitts** . . . to Chief of the Bibliography Branch, replacing Miss Oltman.

Mrs. Rita L. Paddock, from Director of the Regional Information and Communication Exchange at the Fondren Library, Rice University, to assistant librarian for Public Services.

LYNCH

WILCOX

James B. Poteat . . . to head librarian, Television Information Office, New York.

William Reinshagen has accepted a position as documentation editor with Sage Publications, Beverly Hills, Calif.

Mrs. Mary Shaffer . . . appointed Director of the Army Library (TAGO) in the Pentagon.

Richard D. Smith . . . appointed assistant professor of librarianship, University of Washington, effective Sep 1971.

Chris Stevenson, retired Battelle Northwest manager of technical information . . . honored as a Distinguished Alumnus of the University of Washington School of Librarianship for 1971. He is presently working with the Institute of Latin American Affairs, Central Washington State College in Ellensburg.

Dr. Frederick L. Taft, associate director of the Case Western Reserve University Libraries, retired on Jun 30. Effective Jul 1, he is professor emeritus of English at the University.

Sarah Thomas . . . appointed chief, Library Systems Branch, Environmental Protection Agency.

Mrs. Elizabeth Usher . . . elected secretary of METRO, New York Metropolitan Reference and Research Library Agency.

Herbert S. White, from vice president for operations . . . to senior vice president, Institute for Scientific Information, Philadelphia.

Virginia Wilcox, head librarian for Colorado School of Mines . . . appointed chairman of the Engineering School Libraries Division of the American Society for Engineering Education for 1971/72.

SLA Authors

Campbell, Evelyn M., ed. *Selected Bibliography on Algae 1970.* Dartmouth, Nova Scotia, Nova Scotia Research Foundation, 1970.

Christian, Portia, *Ethics in Business Conduct:* Selected references from the record—problems, attempted solutions, ethics in business education. Detroit, Mich., Gale Research Company, 1971. (Mgt. Info. Guide No. 21)

Malinowsky, Harold, ed. "Science and Engineering" Section. In *American Reference Books Annual.* Littleton, Colo., Libraries Unlimited, Inc.

Muench, Eugene V. *Biomedical Subject Headings;* a Comparative Listing of National Library of Medicine (MeSH) and Library of Congress Subject Headings. Hamden, Conn., Shoe String Press, 1971. xii,452p. $35.00.

Tauber, Maurice F.; Merritt, LeRoy Charles; Humphry, James, III; Zachert, Martha Jane K.; Sherrod, John; Jordon, Robert T. Sections on libraries and librarianship in *The Encyclopedia of Education.* New York, The Macmillan Company, 1971.

Wasserman, Paul; Oliver, Betsy Ann; Allen, Eleanor; Georgi, Charlotte; Way, James, eds. *Encyclopedia of Business Information Sources,* 2v. Detroit, Mich., Gale Research Company. $47.50 for 2 vols.

Whitman, Ruth M. *Management Development Bookshelf,* 2nd ed. New York, Pan American, 1970.

Zachert, Martha Jane K. "Preparation for Special Librarianship." In *Education for Librarianship: The Design of the Curriculum of Library Schools.* Champaign, Ill., University of Illinois Graduate School of Library Science, 1971. 195p. $4.00. (Monograph No. 11)

Nominations for 1972 SLA Awards

Nominations for two SLA awards are due by Jan 3, 1972. Individuals, as well as Chapters and Divisions, may submit nominations. All nominations must be completely documented within the definitions of the purposes of the two awards. Forms and instructions for nominations have been distributed to all Chapters and Divisions. Additional forms are available from the Association's New York offices.

The SLA Professional Award. The highest recognition granted by this Association is awarded after consideration of *all significant contributions made to librarianship and information science.* The definition of the SLA Professional Award is:

> "The SLA Professional Award is given to an individual or group, who may or may not hold membership in the Association, in recognition of a specific major achievement in, or a specific significant contribution to, the field of librarianship or information science, which advances the stated objectives of the Special Libraries Association. The timing of the Award shall follow as soon as practicable the recognized fruition of the contribution."

The SLA Hall of Fame. In documenting nominations, the following criteria for eligibility to the SLA Hall of Fame should be remembered:

> "SLA Hall of Fame election is granted to a member or a former member of the Association *near the close or following completion of an* active professional career for an extended and sustained period of *distinguished service to the Association in all spheres of its activities (Chapter, Division, and Association levels).* However, prolonged distinguished service within a Chapter, which has contributed to the Association as a whole, may receive special consideration."

The basic purpose of the SLA Hall of Fame is to recognize those individuals who have made *outstanding contributions to the growth and development of Special Libraries Association—as a whole—over a period of years.*

Mail completed forms to: **Robert W. Gibson, Jr., Chairman**
SLA Professional Award and Hall of Fame Committee
General Motors Corporation
Research Laboratories Library
12 Mile and Mound Roads
Warren, Mich. 48090

vistas

Colloquy on Northern Library Resources

A Colloquy on Northern Library Resources was held in Edmonton, Alberta, Jun 16–17, co-sponsored by the Arctic Institute of North America and the Boreal Institute for Northern Studies of the University of Alberta. Twenty-three librarians, and others closely connected with library work, attended the lively two-day session. All were directly connected with libraries dealing with the North or with libraries serving in the North; and though most were Canadian, the United States and England were also represented. Each library represented was asked to answer a detailed questionnaire concerning their collection and services. These questionnaires were circulated to all participants and were a most useful and informative basis for the discussions.

Subjects covered were 1) Identification and content of various collections; 2) Organization of the collections; 3) Methods of disseminating information of the collections to users; 4) Feasibility of cooperative schemes among the libraries concerned; 5) User needs; 6) Possible application of the computer to northern libraries; 7) Subject headings for northern topics, and 8) Other problems.

The meetings were considered to be most useful and successful, and plans are being made to hold a second colloquy next year. A registry of northern libraries is being prepared; and a new and more detailed questionnaire on their resources will be sent to all libraries in the registry. Replies will be distributed before the next meeting. A newsletter is being planned to keep northern librarians up to date on one another's activities.

Proceedings of the colloquy are being edited and will be published by the Arctic Institute of North America in Montreal in early autumn.

Nora T. Corley
The Arctic Institute of North America
Montreal, P.Q., Canada

Materials Selection Policy

Standard Oil Company (N.J.), Reference Library Service

This materials selection policy covers the acquisition of information required by the library users to satisfy immediate requirements, to establish a comprehensive basic collection and to provide for future needs as far as they are discernible.

Methods established for the library staff to anticipate needs and requests is attendance at some of the staff meetings in departments which are regular users of the library service. The librarian should be well acquainted with the operations and functions of company departments. Orientation programs for employees on the organization of the company is an excellent introduction to acquiring knowledge about the company. The library staff will be kept informed about new departments and their function within the company organization structure.

The selection of materials is established

In the belief that such a policy as this would be of interest and use to all librarians, George Aguirre, administrator of Standard Oil's Reference Library Service, has given *Special Libraries* permission to reprint it.

through the librarian knowing as much as possible about the needs of the people using the library as well as those who do not. This can be learned through observation and conversation. Access to department heads and company subject specialists is invaluable in keeping the librarian informed in order to anticipate the requirements for new information. The Reference Library Service will also conduct user surveys on a 2 to 3 year basis.

The librarian should have some subject competence in the field of petroleum literature. He must know the basic literature of the field as well as related fields—not only the reference works, but the philosophy, jargon, ideas and problems that make up the industry. He should also be aware in some depth of the type of writing and publishing in his field, such as who are the outstanding authors, publishers and editors.

Resources are available within the library to keep the librarians abreast of new materials. There are specialized indexes, bibliographies, trade journals, publishers' catalogs, etc., available to be reviewed regularly for new publications necessary to meet the demands of efficient library service. These resources act as guides and need to be used based on the subject knowledge and user experience of the librarian.

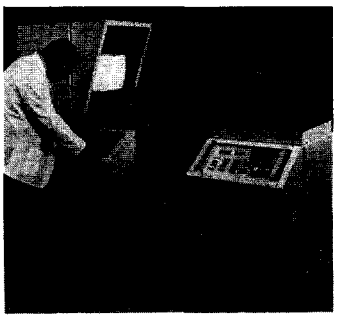
No list can serve as a substitute for the librarian's judgment and evaluation. Librarians consult the selection aids received by the Reference Library Service on a systematic basis to insure that they are purchasing new materials needed to satisfy information needs.

Company personnel are encouraged to suggest and request new materials for the library. The librarian also may contact specific library clients about the purchase of books in their fields. An informed user is one of the best resources for wise selection of library materials.

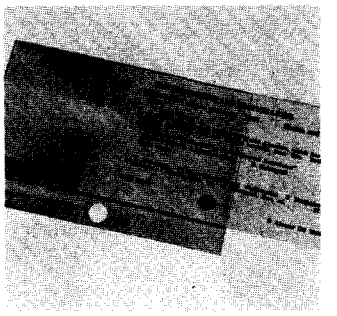
There are many materials of secondary importance to a library. Selection of these materials can be affected by the librarian knowing what other libraries have and what resources are available in the immediate area. An expensive run of periodicals only used infrequently, for example, may not be purchased if it is available in a nearby library. Union lists of serials and union catalogs are collected for identifying, locating, and borrowing items which the library does not purchase.

G. L. Aguirre
Standard Oil Company (N.J.)
New York 10020

HAVE YOU SEEN ?

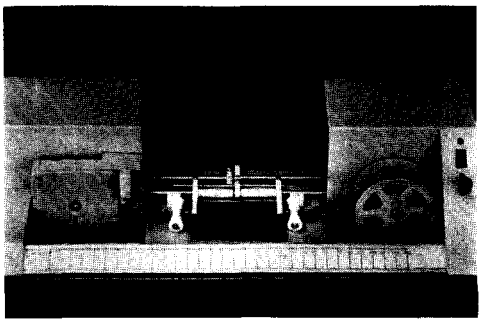


A complete tape-to-film transfer system, priced at $75,000, has been announced. The Model CTR-2 system includes a display tube, signal processing, built-in test facilities, pneumatic-transport camera, and a closed-loop phase-locked camera drive system. For additional information on the color video film recorder, write: C. G. Holzapfel, Teledyne Camera Systems, 131 North Fifth Ave., Arcadia, Calif. 91006.

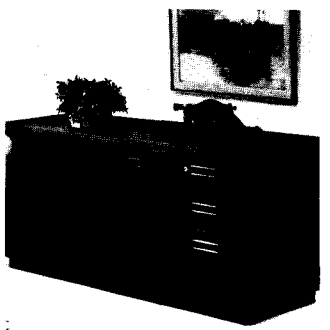


Clear plastic sleeves for catalog cards transform regular cards into indexing guides

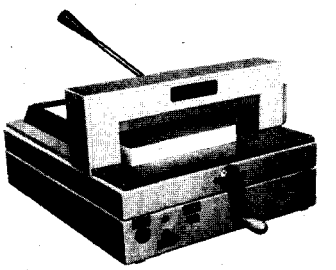
by elevating them a full half inch. The polyester self-indexing guides are designed not to tear, dog-ear or fray, and are secured in the cabinet with the guide rod. For information, write: Bro-Dart, Inc., Dept. PR-252, 1609 Memorial Ave., Williamsport, Pa. 17701.



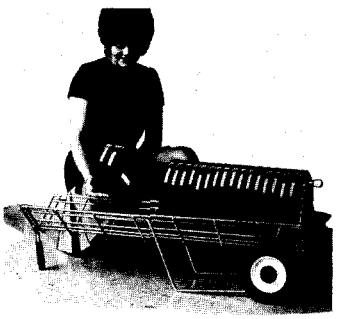
An automatic Image Locator enables microfilm users to locate rapidly a desired image on a roll or cartridge of microfilm. The device automatically advances the film at high speed to the desired frame location, at which point the image is centered manually by the operator. The system, which adapts to various microfilm readers and reader/printers, can be leased for $30 per month from Information Design, Inc., 3247 Middlefield Rd., Menlo Park, Calif. 94025.



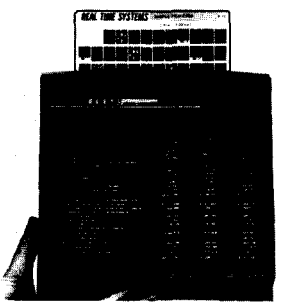
A desk series with a "flush-cube" design has been introduced. The 5200 Series grouping features pedestals to the floor and has no protruding hardware to interrupt the solid silhouette. Drawers have rubber bumpers and safety latches. Box drawers have double wall construction and the rear is hooded to prevent papers from falling out. The grouping is available from Steelcase Inc., 1120 36th St., S.E., Grand Rapids, Mich. 49501.



A 14" electric table-top paper cutter has been announced. Built to accommodate paper cutting up to 14" × 20" where duplicating, mimeo and spirit machines are used, it is said to cut over a ream of paper in seconds. For information: Michael Business Machines Corp., 145 West 45th St., N.Y. 10036.

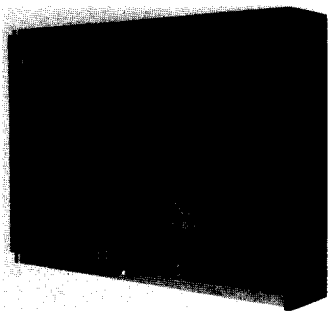


A two-wheel hand truck is designed to transport audio-visual reel cans, computer tape cans and other round containers. Able to hold 20 to 30 containers, the "Lit'l Rounder" is equipped with stair glides for ease of stair climbing. For information, write: Ramco Standard Corp., 600 West Liberty St., Medina, Ohio 44256.



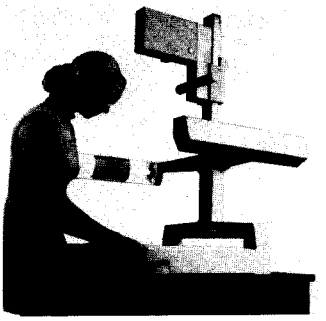
A mini-viewer is a lightweight, portable unit designed for rapid display of 4" × 6" and

tab size microfiche. No moving parts are used; an image is projected on the screen immediately on insertion. The RTS model 100 is priced at $89.50 and is manufactured by Real Time Systems, P.O. Box 54141, Terminal Annex, Los Angeles, Calif. 90054.

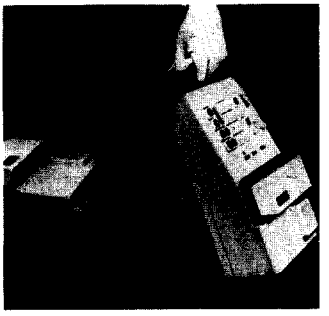


The Perma Film Protection Microfilm Treatment Machine is available by franchise. The machine treats microfilm with a chemical formula to render it scratch and abrasion resistant, while keeping it resilient. For information about the microfilm protection system, contact Permafilm Inc., 257 Park Ave. So., N.Y.C. 10010.

An electric Cardwriter features a 55-character keyboard to permit embossing as many as 12 lines with standard and OCR font. Occupying less than a cubic foot of space, the Cardwriter will emboss up to 60 plastic cards per hour. For information contact: Elliott Business Machines, Inc., Randolph Industrial Park, Randolph, Mass. 02368.



A microfilm recorder, the FileMaster, is said to be a low-cost planetary camera that provides high quality photography for all major microform systems. The recorder has an automatic exposure control; multiple reduction ratios permit filming of varying document sizes without changing lenses. For information, write: Bell & Howell Co., Business Equipment Group, 6800 McCormick Rd., Chicago, Ill. 60645.



The CORDE Porta-Lok prevents pilferage of equipment while at the same time allowing portability within a specified radius. Constructed of heavy gauge steel, the lock can be made to fit numerous different machines. It utilizes an uncopyable key. For information, write: CRD CORDE Locking Systems, 14–56 Bell Boulevard, Bayside, N.Y. 11360.

HAVE YOU HEARD ?

Nonprint Cataloging

Standards for Cataloging Nonprint Materials (rev.ed., 56p., $3.50) is available from the Association for Educational Communications and Technology, a national affiliate of the National Education Association, Washington, D.C. Designed to be used in conjunction with the *Anglo-American Cataloging Rules,* the manual consists of two parts. Section I covers general cataloging principles and rules; Section II provides applications of these rules.

Book Bonding

A magnetic bonding method called Hellerbond is said to bond cover hinges instantly to a book body with a uniform strength up to three times the normal average. The process, which utilizes a special bonding liquid by National Starch and Chemical Corp. and high frequency electrical equipment by Westinghouse, was developed by the Hellerbond Company, 1350 West Fifth Ave., Columbus, Ohio 43212.

The World of Books

The report, "Development of Information Media: Book Development in the Service of Education," was prepared by Unesco for the U.N. Economic and Social Council. The report presents the present world situation regarding distribution and printing of books with recommendations and is available from the Center for Economic and Social Information (CESI), United Nations, New York 10017.

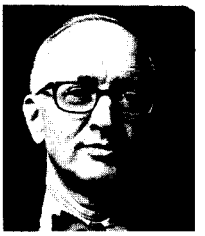
Environmental Library

The Minneapolis Public Library has been designated as a center for environmental information for the state of Minnesota. The appropriation of $25,000 per year for the next two years will be matched by the library. Known as the Environmental Conservation Library of Minnesota (ECOL), it will lend materials by mail and will provide reference service throughout the state.

Microfilm Reader

A motorized microfilm reader eliminates hand cranking, and through the use of a control knob, the reader can control both film speed and direction. The Model 1212 Motorized Microreader, which sells for $259 after Oct 1, is available from University Microfilms, Ann Arbor, Michigan.

MELCHER



New Gale Head

Daniel Melcher has been elected a director and chairman of the board of Gale Research Company, Detroit. Mr. Melcher, who resigned as chairman of the board of R.R. Bowker Co. in 1969, has recently written a book—*Melcher on Acquisition*—on how libraries can buy books to best advantage.

Business Subject Index

Selected Subjects 1950–1970, edited by Doris Zimmermann, is a cumulated subject index to the *Business Reviews* of the 12 Federal Reserve Banks. Published by the Federal Reserve Bank of Philadelphia, it is available from the Bank's Public Information Department, Philadelphia, Pa. 19101.

Organizing Library Materials

The Bibliographic Systems Center at Case Western Reserve University, Cleveland, Ohio, administers a special collection of classification schemes and subject heading lists in a variety of fields. Anyone may use the Center for a recently instituted service charge of $8.00 to cover computer searching and handling.

Information-Imaging Under Study

Arthur D. Little, Inc. is preparing a forecast of technical progress and business growth in information-imaging markets for the period 1971-1980. The study, sponsored by U.S., Japanese and European companies, is expected to be completed in November. Topics to be covered include microimage systems and publishing, computer and calculator printout devices, facsimile, office copying, computer-produced microfilm, video-oriented information equipment, and imaging materials.

Biology Literature

Bioresearch Index is a new service of BioSciences Information Service which provides additional information not covered in *Biological Abstracts.* The new service is included with each annual subscription to *Biological Abstracts.*

New Distributor

The British Information Services, New York, no longer sells and distributes within the U.S. the publications of Her Majesty's Stationery Office. They are now distributed by Pendragon House Inc., 899 Broadway Ave., Redwood City, Calif. 94063.

Fellowships for Librarians

The Council on Library Resources is offering a limited number of fellowships and internships to mid-career librarians of the U.S. and Canada who have demonstrated a strong potential for leadership in the profession. Application forms are available from The Fellowship Committee, Council on Library Resources, One Dupont Circle, Suite 620, Washington, D.C. 20036. Completed applications must be received by Dec 1, 1971.

Pamphlet Files

Acid free pamphlet files feature metal edge fibreboard construction and are designed for easy access. They are available from The Hollinger Corporation, 3810 South Four Mile Run Dr., Arlington, Va. 22206.

Money for Libraires

The 1972 budget for the U.S. Office of Education is the largest education bill ever enacted. For fiscal year 1972, $85,109,000 was appropriated for libraries and educational communications (the amount for FY1971 was $73,001,500).

Library Problems on Film

A 16mm, 10 minute color film entitled "The Library of the Future" touches on some common library problems and how, through the use of new systems, they can be solved. For information, write: Remington Rand Library Bureau Division, 801 Park Ave., Herkimer, N.Y. 13350.

DDC Technical Reports

"Defense R&D of the 1960's" is a compendium of 400,119 descriptions of technical reports accessioned by the Defense Documentation Center during the decade. Sections 1 and 2 cover unclassified, unlimited distribution documents. Sections 3 and 4 contain classified materials. Each section is indexed. For information, write: Defense Documentation Center, Attn: DDC-TSR, Cameron Station, Alexandria, Va. 22314.

Oil Information

Information, materials, and free reference services are available on all offshore oil pollution phenomena from the Oil Spill Information Center, University of California, Santa Barbara. For a brochure describing the Center's documentation and information program, write Fred E. Hearth, Coordinator, Oil Spill Information Center or H. Maria Patermann, Head, Sciences-Engineering Library, University Library, University of California, Santa Barbara, Calif. 93106.

CNLA Officers 1971/72

Robert W. Gibson, Jr., General Motors Research Laboratories, is chairman and Jane L. Hammond, Villanova University School of Law Library is secretary-treasurer for 1971/72 of the Council of National Library Associations. Immediate past chairman is Mrs. Beatrice M. James, Bergenfield, New Jersey, Free Public Library. Directors are Rev. James J. Kortendick, Department of Library Science, Catholic University of America; Rabbi Theodore Wiener, Hebraic Language Unit, Descriptive Cataloging Division, Library of Congress; and M. Richard Wilt, executive secretary, Catholic Library Association.

Marketing Translations

A new marketing program instituted by the National Translations Center is attempting to increase the use of the Center's reference publication *Translations Register-Index* within subscribing libraries. The Center will provide news releases to local media and house organs describing the ease of use of the journal. Leaflets will be distributed and an audio tape describing the Center will be available. For information, contact the Center at 35 W. 33rd St., Chicago, Ill. 60616.

Defense R&D of the 1960's

Seal of Approval for Microfilm Equipment?

The National Microfilm Association is considering the possible need for certification programs for microfilm equipment which would establish minimum standards and a "seal of approval." All those wishing to comment on any aspect of such a program should write to NMA, Frederick L. Williford, Executive Vice President, 8728 Colesville Rd., Silver Spring, Md. 20910.

Americana on Tape

Oral History in the United States: A Directory describes 230 oral history projects and their holdings of tapes and transcripts. Designed as a research tool to help scholars gain access to such unpublished reminiscences, the 120 page guide may be ordered at $4.00 a copy, postpaid, from the Oral History Association, Box 20, Butler Library, Columbia University, N.Y. 10027.

Para-Computer Available

"Info-Trieve 10" is an electronic data storage and retrieval system that is said to provide computer-like capabilities without computer costs. The system requires no programming and can be operated by anyone who can type. A brochure describing the system's capabilities is available from BCD Computing Corp., P.O. Box 240, Buffalo, N.Y. 14225.

Latin American Agricultural Documentation

The "Boletin para Bibliotecas Agricolas," issued by the Inter-American Center for Agricultural Documentation and Information in Costa Rica—IICA-CIDIA—has begun to include, since vol.8, no.1, 1971, a section describing the contents of library and documentation journals available in the IICA-CIDIA Library. Xerox copies of articles are available for $0.08 per page plus air mail postage.

AFIPS Proceedings

AFIPS Conference Proceedings Index, a hard cover volume indexing vols.1–37 of the Proceedings of Spring and Fall Joint Computer Conferences from 1951–1970, is available from AFIPS Press, 210 Summit Ave., Montvale, N.J. 07645. The price is $20, and $10 prepaid for members of AFIPS constituent societies. The Proceedings of the 1971 Spring Joint Computer Conference, vol.38, are also available at a price of $26, and $13 for members of constituent societies.

Networks in Indiana

Indiana State Library is sponsoring a seminar on information networks for Indiana librarians Oct 26–28. The seminar, to be held at Purdue University Memorial Center, will explore details, theory, and needs and results of all facets of information networks. The director is Donald P. Hammer, Libraries Systems Development, Purdue University Libraries, Lafayette, Ind. 47907.

Physics Information on Tape

SPIN, Searchable Physics Information Notices, is a monthly file of current physics and astronomy information on magnetic tape, generated by the National Information System for Physics and Astronomy. The information for each article includes title, authors and affiliations, abstract, journal, volume, issue, page and date, special index terms and key words, and references to all cited journal articles. The tapes are supplied once a month, by lease or license. For information, write Dr. Rita G. Lerner, Information Division, American Institute of Physics, 335 E. 45th St., N.Y. 10017.

Samples on Microcards

The National Design Center, 425 E. 53rd St., New York, distributes color microfilm cards that present product samples and swatches. The cards are distributed to architectural and design firms which are clients of its IDAC Systems Division. IDAC markets an architectural project management service which includes the retrieval system for samples and swatches on microfilm. Copies of SpectraScan II microcards are available on request.

Educational Information Center

The ERIC Clearinghouse on Library and Information Sciences has been awarded a contract to assist the USOE National Center for Educational Communication (NCEC) in planning, designing, and operating a model Educational Information Center (EIC) at the USOE, 400 Maryland Ave., S.W., Washington, D.C.

Libraries in Nigeria

Nigerian Libraries: Bulletin of the Nigerian Library Association, begun in 1964, is published three times a year. The rate for subscriptions to the U.S. is $6.00 per volume. Address orders to: Business Manager, *Nigerian Libraries,* c/o University of Ibadan, Nigeria.

Nurses in America

The *Directory of Nurses with Earned Doctoral Degrees* is available from the American Nurses' Foundation, Ten Columbus Circle, New York 10019. The 1969 *Directory* is $1.00 and each of the 1970 and 1971 supplements is also $1.00.

Computerized Information Services

The *Encyclopedia of Information Systems and Services,* the culmination of a three year research effort of Dr. Anthony T. Kruzas, features computerized information services, emphasizing particularly applications of new technologies, new storage media and new reference techniques. There are full-page descriptions of services offered by more than 800 organizations and agencies, 12 indexes, and an acronym dictionary. Copies are available at $67.50 from Edwards Brothers, 2500 S. State St., Ann Arbor, Mich. 48104.

Advanced Techniques Workshop

The University of California Extension will conduct a five-day workshop on microfilm applications in library science, Nov 15–19 in San Diego. Registration is $250, including tuition, materials and lunches. For information write: Hugh Davison, University of California Extension, San Diego, P.O. Box 109, La Jolla, Calif. 92037.

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An extensive reorganization has taken place within the Department of Commerce. The Office of Business Services, within the Bureau of Domestic Commerce, has 42 Field Offices which serve as local contact points with the business community. A list of the Field Offices follows:

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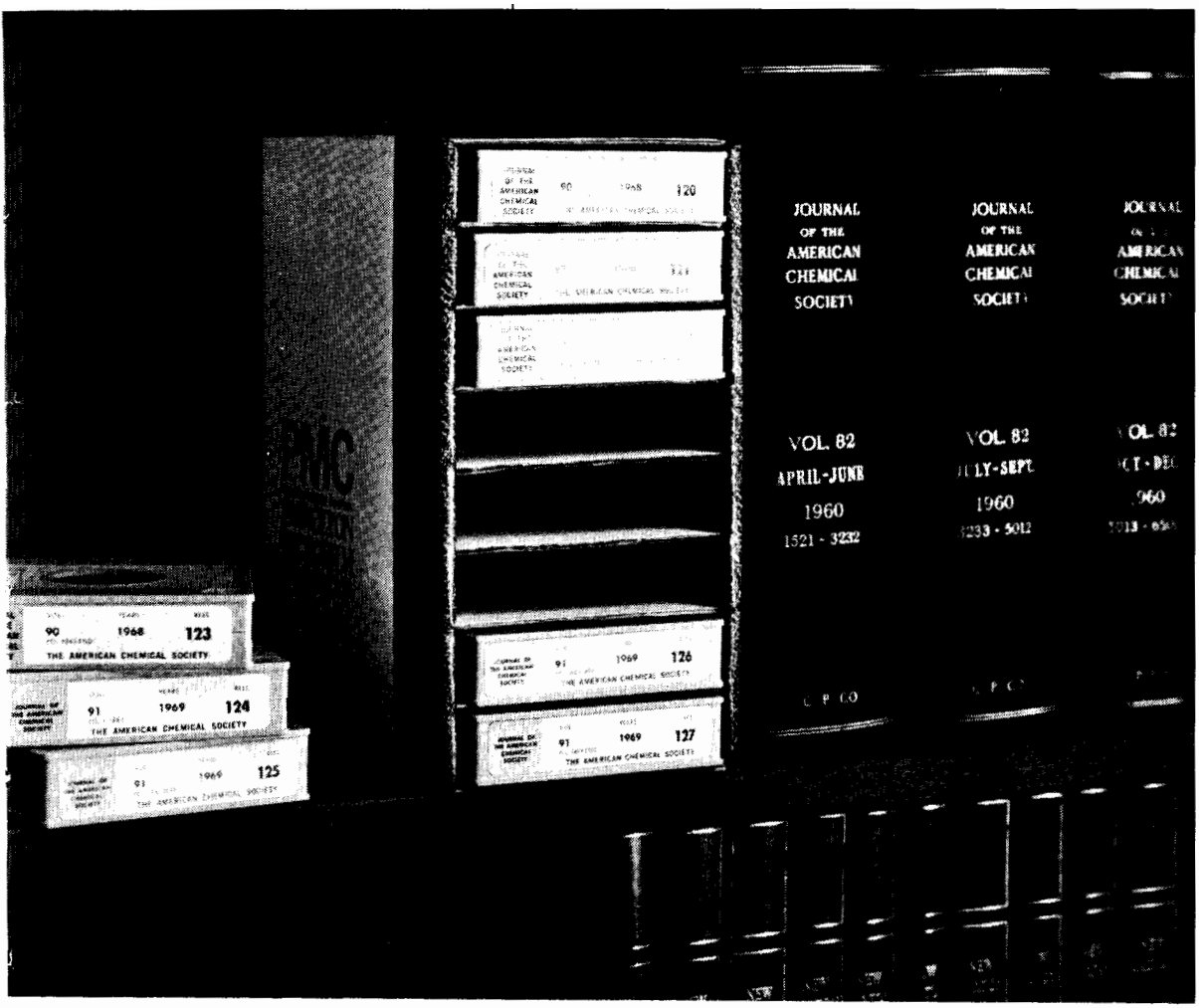

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